

# Aberdeen Western Peripheral Route / Balmedie - Tipperty

Competition for the Design, Build, Finance and Operation of the  
Aberdeen Western Peripheral Route / Balmedie - Tipperty

Volume Five

Schedule 2: New Works Requirements

Part 1: General Requirements

709/ACP/600

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**SCHEDULE 2: NEW WORKS REQUIREMENTS****PART 1: GENERAL REQUIREMENTS**

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## Part 1: General Requirements

## 1 Introduction

- 1.1 This Schedule 2 describes the New Works Requirements for the Design, construction and completion of the New Works.
- 1.2 Unless otherwise noted all statements refer to the whole of the New Works.
- 1.3 Within these New Works Requirements and other parts of this Agreement, chainage is referred relative to the Reference Drawings as listed in Appendix 0/4 to Part 4 of these New Works Requirements.
- 1.4 Reference to left (L) and right (R) of chainage points is relative to the direction of increasing chainage in metres.
- 1.5 Within these New Works Requirements and all other parts of this Agreement, Reference Points are used to denote the position on the Reference Drawings as listed in Appendix 0/4 to Part 4 of these New Works Requirements.

## 1.6 Definitions

- 1.6.1 Defined terms used in these New Works Requirements are the same as those set out in this Agreement with the following additional defined terms:

**Establishment Period** means a period of five years measured from: the date of Final Completion for O&M Roads; and the date of the relevant Third Party Roads Completion Certificate for individual Third Party Roads. During the Establishment Period the Company shall carry out such works as are specified in this Agreement, including, but not limited to, replacement of any failed landscape planting element.

**Land Made Available by the Scottish Ministers for the New Works** means the land shown on the drawings listed in Appendix 0/4 to Part 4 of these New Works Requirements under the title "Land Made Available by the Scottish Ministers for the New Works".

**Reference Drawings** means the set of drawings listed in Appendix 0/4 to Part 4 of these New Works Requirements under the title "Reference Drawings".

**Reference Points** means the points shown on the drawings listed in Appendix 0/4 to Part 4 of these New Works Requirements under the title "Reference Drawings".

**Trunk Road** means a road for which there is a Trunk Road or Special Road Order.

- 1.6.2 References in these New Works Requirements to "paragraph(s)", "section(s)", "item(s)", "table(s)" and "Appendix / Appendices" shall refer to such "paragraph(s)", "section(s)", "item(s)", "table(s)" and "Appendix / Appendices" of that part of these New Works Requirements.
- 1.6.3 Except to the extent defined elsewhere in this Agreement, defined terms contained in these New Works Requirements shall have the meaning given to them in the DMRB as the context requires.

## 2 Design, Construction and Completion

- 2.1 Subject to the other provisions of this Agreement, the Design, construction and completion of the New Works shall comply with:
- 2.1.1 the DMRB;
- 2.1.2 the MCHW;
- 2.1.3 the Specification as found in Part 4 of these New Works Requirements;

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- 2.1.4 The Design and Use of Directional Information Signs: Local Transport Note 1/94;
- 2.1.5 the Traffic Signs Regulations and General Directions 2002;
- 2.1.6 the Traffic Signs Manual;
- 2.1.7 the Disability Discrimination Act Good Practice Guide for Roads (Transport Scotland);
- 2.1.8 the Certification Procedure; and
- 2.1.9 any other specific standards otherwise referenced elsewhere in this Agreement.
- 2.2 The Design, construction and completion of the New Works shall meet the requirements and, as relevant, be consistent with the Environmental Assessment Documents listed in Schedule 8.
- 2.3 Subject to the provisions of this Agreement, the Company shall prepare and supervise the preparation of a Design sufficient to allow the construction and completion of the New Works, which New Works Design shall:
- 2.3.1 be developed from and be consistent with the Conceptual Design; and
- 2.3.2 comply with and be carried out in accordance with these New Works Requirements and the provisions of the Agreement.
- 2.4 The Company shall ensure that all persons referred to in the Certification Procedures shall:
- 2.4.1 at all relevant times be appointed to carry out the procedures referred to therein; and
- 2.4.2 at all times comply with the Certification Procedure.
- 2.5 The Company shall not commence or permit the commencement of construction of any part of the New Works until the relevant pre-construction certificates (all relevant certificates necessary for the certification of the relevant part of the New Works Design) shall have been submitted to the Contracting Authority in accordance with the Certification Procedure and the Contracting Authority have acknowledged receipt of such pre-construction certificates.
- 2.6 Notwithstanding the other provisions of this Agreement, the Company shall consult and comply without limitation with those organisations identified in Appendix B to Part 2 of these New Works Requirements. The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.
- 2.7 Design Checker**
- 2.7.1 The Design Checker shall be appointed by the Company, who shall submit names and details of the proposed Design Checker for approval in accordance with the Certification Procedure.
- 2.7.2 Once approval of the Design Checker is obtained, the Company shall appoint the Design Checker.
- 2.8 The Company shall appoint an Access Champion in accordance with the *Disability Discrimination Act Good Practice Guide for Roads (Transport Scotland)* who shall champion the needs of non-motorised users and disabled people and who shall

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ensure the Works are undertaken in accordance with the Disability Discrimination Act Good Practice Guide for Roads (Transport Scotland).

### **3 General Requirements**

3.1 Where the DMRB requires a decision by the Designers which affects the standard of the Design, each decision shall be recorded and shall form part of the information accompanying the appropriate Design Certificate or Design Interim Certificate as detailed in the Certification Procedure.

3.2 Any requirements that any material or article shall comply with any specified standard whether a British Standard, other named standard or otherwise, shall be satisfied by compliance with any relevant national or governmental standard of any member state of the European Union or any relevant international standard recognised in such a member state, provided that in either case the standard in question offers guarantees of safety, suitability and fitness for purpose equivalent to those offered by the standard which is specified in this Agreement.

3.3 Any requirement to use a material, article or testing which is defined by reference to a named supplier or manufacturer or a specified Quality Assurance Scheme or Agrément Board Certificate, or which is registered with or has otherwise received the approval of the Overseeing Organisation shall be satisfied using material or an article which has received equivalent approval in another member state of the European Union provided that the material or article in question is as safe, suitable and fit for the relevant purpose as material, article or testing complying with the requirement as set out in this Agreement.

3.4 Existing materials, street furniture, or infrastructure may only be reused where such material fully satisfies the Specification and the relevant codes, schemes, and Certification Procedure and shall be clearly identifiable and accompanied by all relevant and necessary certificates before it shall be used in the New Works.

3.5 For the purposes of this Agreement best practice shall be applied at all times.

In the context of any part of the Design, where any ambiguity shall be raised by either:

3.5.1 the Company;

3.5.2 the New Works Contractor;

3.5.3 the Designer;

3.5.4 the Design Checker; or

3.5.5 the Contracting Authority.

as regards either advice or its application in terms of best practice and where such ambiguity cannot be resolved between the Company and the Contracting Authority, then the matter shall be referred to the Dispute Resolution Procedure for determination.

### **4 Provision of Records and Information**

4.1 Without prejudice to any other provisions of this Agreement the Company shall provide the records and information required in Part 6 of these New Works Requirements.

#### **4.2 Property Condition Surveys**

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- 4.2.1 The Company shall carry out a risk assessment of the effects the Design, construction and completion of the New Works may have on the structural integrity of adjacent buildings and Structures.
- 4.2.2 The Company shall arrange for property condition surveys to be undertaken in relation to those buildings and Structures that the Company considers appropriate relative to their proximity to the New Works in advance of any New Works commencing.
- 4.2.3 Notwithstanding any other provisions of this Agreement the Company shall arrange for property condition surveys to be carried out on the following properties and buildings associated with the properties:

## 4.2.4

|                                                              |
|--------------------------------------------------------------|
| 1 HILL FARM, MILLTIMBER AB13 0ET                             |
| 1 HILL OF MILLTIMBER, MILLTIMBER AB13 0ET                    |
| STONEHILL HOUSE, COOKNEY, NETHERLEY, ABERDEENSHIRE, AB39 3SD |
| 1 MILLTIMBER BRAE, MILLTIMBER AB13 0DY                       |
| 13 MARYWELL PARK HOMES, ABERDEEN , NIGG AB12 4LQ             |
| 2 HILL FARM, MILLTIMBER AB13 0ET                             |
| 2 HILL OF MILLTIMBER, MILLTIMBER AB13 0ET                    |
| 2 MILLTIMBER BRAE, MILLTIMBER AB13 0DY                       |
| 248 NORTH DEESIDE ROAD, MILLTIMBER AB13 0DJ                  |
| 250 NORTH DEESIDE ROAD, MILLTIMBER AB13 0DJ                  |
| 250A NORTH DEESIDE ROAD, MILLTIMBER AB13 0DJ                 |
| 2A MILLTIMBER BRAE, MILLTIMBER AB13 0DY                      |
| 3 HILL FARM, MILLTIMBER AB13 0ET                             |
| 302 NORTH DEESIDE ROAD, MILLTIMBER AB13 0AB                  |
| 309 NORTH DEESIDE ROAD, MILLTIMBER AB13 0DL                  |
| 4 HILL FARM , MILLTIMBER AB13 0ET                            |
| 45 CULTER HOUSE ROAD, MILLTIMBER AB13 0EN                    |
| 47 CULTER HOUSE ROAD, MILLTIMBER AB13 0EP                    |
| 5 HILL FARM, MILLTIMBER AB13 0ET                             |
| 5 MARYWELL PARK HOMES, ABERDEEN, NIGG AB12 4LQ               |
| 6 HILL FARM, MILLTIMBER AB13 0ET                             |
| 61 CULTER HOUSE ROAD, MILLTIMBER AB13 0EP                    |
| 69A CULTER HOUSE ROAD, MILLTIMBER AB13 0EP                   |
| AIRYPARK COTTAGE, MILLTIMBER AB13 0ER                        |
| AUCLUNIES GRIANAN, ABERDEEN, BLAIRS AB12 5YA                 |
| BENVIEW, ABERDEEN KINGSWELLS AB15 8QQ                        |
| BOYNE VILLA, ABERDEEN , NIGG AB12 3LL                        |
| BURNHEAD COTTAGE, ABERDEEN BLAIRS AB12 5YX                   |

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|                                                                             |
|-----------------------------------------------------------------------------|
| CHARLESTON, NEWTONSYDE, ABERDEEN, NIGG AB12 3LL                             |
| CHARLESTON, BOTHIEBRIGG COTTAGE, ABERDEEN, NIGG AB12 3TP                    |
| CLIANTHUS LODGE, ABERDEEN BLAIRS AB12 5YT                                   |
| CORSEHILL BIRCHVILLE, ABERDEEN NEWMACHAR AB21 7XA                           |
| CORSEHILL STANE DYKES, ABERDEEN NEWMACHAR AB21 7XA                          |
| CORSEHILL THE LAURELS, ABERDEEN NEWMACHAR AB21 7XA                          |
| CROFT HOUSE , CULTER HOUSE ROAD, MILLTIMBER AB13 0EP                        |
| EAST LODGE CULTER HOUSE ROAD MILLTIMBER AB13 0EP                            |
| EDGEHILL HOUSE, NORTH DEESIDE ROAD, MILLTIMBER AB13 0DH                     |
| GAIRN PARK, ABERDEEN KINGSWELLS AB15 8QJ                                    |
| GOVAL VILLA, ABERDEEN DYCE AB21 0HS                                         |
| HARECRAIG , STONEHAVEN, NETHERLEY AB39 3SL                                  |
| HILLVIEW HOUSE , CONTLAW ROAD, MILLTIMBER AB13 0EL                          |
| HOMEWOOD COOKNEY, STONEHAVEN, NETHERLEY AB39 3SL                            |
| LAGGAN COTTAGE, MILLTIMBER AB13 0EQ                                         |
| LEUCHLANDS CROFT, ABERDEEN WHITECAIRNS AB23 8UT                             |
| LOCHVIEW CROFT, ABERDEEN, NIGG AB12 3LL                                     |
| LOCHVIEW, ABERDEEN, NIGG AB12 3LL                                           |
| LYNDMOOR, ABERDEEN DYCE AB21 0HA                                            |
| LYTHEWOOD, ABERDEEN KINGSWELLS AB15 8QQ                                     |
| MEADOWBANK, STONEHAVEN, NETHERLEY AB39 3SD                                  |
| MILLTIMBER FARM, MILLTIMBER AB13 0AA                                        |
| NORTH COOKNEY COTTAGE, STONEHAVEN, NETHERLEY AB39 3SB                       |
| NORTH COOKNEY CROFT, STONEHAVEN, NETHERLEY AB39 3SB                         |
| NORTH COOKNEY FARM , STONEHAVEN, NETHERLEY AB39 3SL                         |
| NOVARA, ABERDEEN, NIGG AB12 3LL                                             |
| PARKHILL PUMPING STATION, ABERDEEN DYCE AB21 0HQ                            |
| PARKHILL ROSELEA, ABERDEEN NEWMACHAR AB21 7XA                               |
| THE SIDING, STATION ROAD, MILLTIMBER AB13 0DP                               |
| TIGH-NA-BRUAICH, ABERDEEN KINGSWELLS AB15 8QQ                               |
| WHISTLEBRAE STEADING, ABERDEEN, BANCHORY DEVENICK AB12 5YJ                  |
| ABERDEEN PETROLEUM CLUB, NORTH DEESIDE ROAD, MILLTIMBER, ABERDEEN, AB13 0AB |
| STONEHILL HOUSE, COOKNEY, NETHERLEY, ABERDEENSHIRE, AB39 3SD                |

Such surveys shall be carried out by a chartered structural engineer, with the details of the chartered structural engineer which the Company intends to use to carry out the surveys to be submitted for written approval by the Contracting Authority.

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- 4.2.5 Such surveys shall be carried out in two stages as follows:
- (i) The first stage shall consist of pre-construction start condition surveys including photographic records to be carried out prior to the commencement of any New Works. Three copies of the pre-construction start condition survey records, and reports shall be completed and forwarded to the Contracting Authority in advance of any New Works commencing.
  - (ii) The second stage shall consist of post-construction completion condition surveys including photographic records to be carried out no later than 4 weeks after Final Completion. Three copies of the post-construction completion condition survey records, and reports shall be completed and forwarded to the Contracting Authority no later than 8 weeks after Final Completion.
- 4.2.6 In respect of all such property condition surveys, the Company shall arrange entry to the properties with the property owners. This entry arrangement shall be in writing with a copy of this correspondence issued to the Contracting Authority. The Company shall provide the property owners with a copy of both the pre-construction and post-construction property condition surveys at the same time as they are provided to the Contracting Authority.

**5 Disruption During Construction**

- 5.1 The Company shall ensure that disruption to road Users and other third parties during construction and completion of the New Works shall be kept to the minimum possible. The Company shall ensure that there shall be adequate alternative provision of an appropriate standard for all vehicular, non-motorised Users and animal traffic to all existing roads, footways, accesses, premises and otherwise either adjacent to or affected by the New Works.
- 5.2 Notwithstanding the other requirements of this Agreement the Design shall ensure the continuity of operation of all existing electric fencing and existing water supplies affected by the Design, construction and completion of the New Works. The Company shall be aware that the scheme is expected to affect the operation of a number of existing private water supplies, and shall make the necessary arrangements for provision of alternative water supplies as necessary in the event of disruption to such supplies.

**6 Temporary Traffic Management Schemes**

- 6.1 Notwithstanding any other provisions of this Agreement, the Company shall consult and comply with the requirements of:
- 6.1.1 Transport Scotland;
  - 6.1.2 Aberdeen City Council;
  - 6.1.3 Aberdeenshire Council;
  - 6.1.4 Police Scotland; and
  - 6.1.5 North East Management Unit;
- as appropriate on all Temporary Traffic Management Schemes.

The Company shall provide Consultation Certificates in accordance the Certification Procedure in respect of this requirement.

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6.2 Notwithstanding any other provisions of this Agreement, the Company shall consult and comply with the requirements of:

6.2.1 Police Scotland;

and provide assistance to the Police in monitoring and enforcing speed restrictions.

The Company shall provide Consultation Certificates in accordance the Certification Procedure in respect of this requirement.

## 7 Description of the New Works

7.1 The New Works for the AWPR/B-T Project shall consist of the design construction completion and financing of a package of two discrete construction elements, each of which has been developed separately through the statutory process, comprising:

- (i) a new A90 trunk road between Stonehaven and Blackdog, together with a new A956 trunk road between Charleston and Cleanhill; and
- (ii) a new A90 trunk road between Balmedie and Tippetty, together with an improved A90 trunk road between Blackdog and Balmedie.

7.2 In addition, the New Works for this Project shall include the design construction and completion of a slip road access from the A96 to the A96 Park and Choose site at Dyce. This element shall be included within the overall scope of works for the AWPR.

7.3 The scope of the New Works shall consist of, but not be limited to, the works described below.

7.3.1 Aberdeen Western Peripheral Route

- (i) construction of approximately 46 km of new off-line dual two and three lane all-purpose carriageway;
- (ii) construction of approximately 1 km of widened dual three lane all-purpose road within the existing A90 trunk road;
- (iii) construction of seven new junctions at Cleanhill, Milltimber, South Kingswells, North Kingswells, Craibstone/Dyce, Goval and Blackdog and amendment of two existing junctions, at Stonehaven and Charleston;
- (iv) construction and improvements of structures, including two new major river crossings at the River Dee and the River Don, and a new road bridge crossing over the Aberdeen-Inverness Rail Line;
- (v) demolition and replacement of existing trunk road bridge structures;
- (vi) construction of new access roads and side roads and realignment of existing side roads;
- (vii) construction of new pedestrian/cycle paths;
- (viii) construction of flood alleviation storage areas; and
- (ix) construction of a slip road approximately 200m in length from the A96 to the A96 Park and Choose Site.

7.3.2 A90 Balmedie - Tippetty

- (i) construction of approximately 9 km of new off-line dual two lane all-purpose carriageway;
- (ii) construction of approximately 3 km of rehabilitated dual two lane all-purpose road within the existing A90 trunk road;

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- (iii) construction of three new junctions at Balmedie, Newburgh Road and Tippetty;
- (iv) construction of a number of highway structures, including a crossing of the Foveran Burn;
- (v) construction of new access roads and side roads and realignment of existing side roads; and
- (vi) construction of new pedestrian/cycle paths

## 7.3.3 General

- (i) new carriageway drainage incorporating sustainable drainage systems (SuDS) facilities;
- (ii) environmental mitigation and enhancement works as described in the Environmental Assessment Documents;
- (iii) road boundary fencing and road restraint systems;
- (iv) watercourse diversions and drainage/watercourse culverts;
- (v) earthworks and ground improvement works;
- (vi) kerbs, footways and paved areas;
- (vii) traffic signs and road lighting;
- (viii) an ITS across the Project network, including communications infrastructure, electrical work, variable message signs and the like;
- (ix) diversionary and other similar works for Statutory Undertakers, private utility companies and the like, including pipeline crossing structures in respect of pipelines owned by BP and Shell;
- (x) traffic management;
- (xi) accommodation works; and
- (xii) all other works generally associated with a special road and trunk road scheme.

**8 Land Made Available by the Scottish Ministers for the New Works**

- 8.1 The extent of the land made available by the Scottish Ministers for the purposes of constructing the New Works shall be as shown on the Land Made Available by the Scottish Ministers for the New Works drawings as listed in Appendix 0/4 to Part 4 of these New Works Requirements. Details of the limitations on use of the Land Made Available by the Scottish Ministers for the New Works shall be as contained in Appendix 1/7 to Part 4 of these New Works Requirements and the other provisions of this Agreement. Any other information shown on the Land Made Available by the Scottish Ministers for the New Works drawings including survey information and otherwise shall be for information only. Such other information shall be unwarranted by the Scottish Ministers and does not form a part of this Agreement.
- 8.2 Where any Consents or otherwise shall be required as a result of the Design or any part of the Design for any part of the New Works, these shall be obtained by the Company from the Relevant Authority and submitted to the Scottish Ministers prior to construction, completion and maintenance of that affected part of the New Works proceeding.
- 8.3 The Company shall consult and comply with the requirements of:
- 8.3.1 Aberdeen City Council; and



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**8.3.2** Aberdeenshire Council;

as appropriate, with respect to working hours and the control of noise and vibration as detailed in Appendix 1/9 to Part 4 of these New Works Requirements. The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

**9 Licences Approvals and Otherwise**

9.1 The Company shall not have either possession or right of entry onto land owned or reputed to be owned by either:

9.1.1 Network Rail; or

9.1.2 any other third party;

until any necessary licences, approvals and otherwise shall have been granted in writing by either Network Rail or any other third party.

9.2 The Company shall consult, comply and negotiate with either Network Rail or any other third party to obtain the necessary licences, approvals and otherwise to enable the construction and completion of the New Works. In this respect the Company shall also refer to Appendix 1/7 to Part 4 of these New Works Requirements. The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

9.3 The Company shall consult and comply with the requirements of SEPA with respect to complying with the requirements of the Water Environment (Controlled Activities) Regulations 2005 (CAR). The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement. The Company shall also provide a copy of the relevant licences, registrations and otherwise as required under CAR to the Contracting Authority prior to commencement of the relevant New Works.

**10 Access to the New Works Site**

1.1 All roads and accesses affected by the New Works shall be retained and kept operational throughout the period of the New Works until alternative suitable means of access are provided in accordance with Appendix 1/17 and Appendix 1/18 to Part 4 of these New Works Requirements.

1.2 Notwithstanding the other provisions of this Agreement, any agreement to alter a private access in any way shall be confirmed in writing by the Company with the appropriate landowners, tenants and occupiers and other authorised users and the Company shall be required to have such agreement in writing prior to any alteration to the access. A copy of any agreement together with supporting drawings shall be submitted to the Contracting Authority prior to implementation of such agreements.

1.3 The Company shall provide at least four weeks written notice to the Contracting Authority, the Relevant Authorities and other interested parties in advance of its intended date for stopping up any roads in accordance with the Orders.

1.4 Road access to the New Works Site shall be gained solely via classified roads subject to the requirements of Appendix 1/19 to Part 4 of these New Works Requirements.

1.5 Access to the New Works Site from public roads shall be subject to the requirements of Appendix 1/17 to Part 4 of these New Works Requirements.

1.6 Notwithstanding the other provisions of this Agreement, the Company may gain entry to the New Works Site via private land only with the prior written agreement of

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the landowner and occupier after having obtained any necessary planning consent or otherwise. Access to such private land from the public road shall be to the requirements of paragraphs 10.1 and 10.2.

- 1.7 The Company shall bear full responsibility for negotiating, paying for and bearing all costs relating to these accesses and for any matters arising with parties who consider themselves to be affected by these accesses.
- 1.8 The Company shall assess the potential environmental impacts of any such access and ensure that any adverse environmental impact shall be avoided.

**11 Orders**

- 11.1 Notwithstanding any other provisions of this Agreement, where the Company enacts either further Orders or Environmental Assessment Documents to accommodate the Design, construction and completion of the New Works, the Company shall be responsible for:
- 11.1.1 any additional time and cost for Design, construction and completion of the New Works, wayleaves, material procurement and otherwise;
- 11.1.2 any other associated work and/or risks; and
- 11.1.3 all other costs and profit including those required by the Undertakers in connection with privately and publicly owned Apparatus and otherwise.

**12 Accommodation Works**

- 12.1 The Company shall obtain all permissions which are required to enable the Accommodation Works to proceed and shall consult and comply with relevant landowners, tenants, occupiers and other authorised users in connection with the provision of Accommodation Works as referred to in Appendix 1/15 to Part 4 of these New Works Requirements. The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.
- 12.2 The Design shall ensure that Accommodation Works are completed as early as practicably possible during the New Works.
- 12.3 At least seven days prior to entering any areas of land, the Company shall provide written notice to the owner and occupier of the land advising of the proposed date of entry, together with a programme for completing all Accommodation Works on the land. The owner and occupier of the land shall be kept fully informed of the progress for completing any Accommodation Works.

**13 Public and Private Roads Accesses and Public and Private Rights of Way**

- 13.1 The Company shall consult and comply with Relevant Authorities in connection with alterations to public and private roads, accesses and public and private rights of way. The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.
- 13.2 All public and private roads, accesses and public and private rights of way affected by the New Works shall be retained and maintained throughout the period of the New Works until alternative suitable means of access shall be provided by the Company.
- 13.3 Any diversions which the Company proposes shall be shown to cause minimum disruption to the end User.

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13.4 All construction procedures and equipment shall include adequate provision to ensure the safety of members of the public and others using public and private roads, accesses and public and private rights of way affected by the New Works.

13.5 Any agreement to alter a private road or access in any way shall be confirmed in writing by the Company with the appropriate landowners, occupiers and other authorised users and the Company shall be required to have such agreement in writing prior to any alteration to the road or access.

The Company shall assess the environmental impacts of the proposed changes to the New Works and ensure that all reasonable measures are taken to avoid or mitigate adverse environmental impacts.

A copy of any agreement together with supporting drawings shall be submitted to the Contracting Authority prior to the Company carrying out any such alterations.

## 14 Community Relationships and Public Liaison

14.1 The Company shall be deemed to be aware that within sections of the local communities in the vicinity of the New Works and within other groups there exists opposition towards the Design, construction and completion of the New Works which may manifest itself by public protests, vandalism, hindrance, disruption, site occupation, demonstrations, adverse publicity and otherwise.

14.2 In the event that such actions occur, the Company's rights and obligations in this regard shall be subject to the terms and provisions set out in this Agreement.

14.3 Where there is the requirement for the procurement of security industry services through any contract or subcontract the Company shall ensure that any contractor or subcontractor be registered with the Security Industry Authority (SIA) Approved Contractors Scheme for the category of service being provided / performed under the contract or subcontract. Additional information with suggested contractual language to be incorporated can be found in the "Scottish Procurement Policy Note SPPN 2/2010 dated 17th February 2010".

14.4 Notwithstanding any other provisions of this Agreement, throughout the duration of the Design, construction and completion of the New Works the Company shall consult and comply with Police Scotland on a regular and as necessary basis with regard to the security and protection of:

14.4.1 the New Works;

14.4.2 all persons entitled to be upon the New Works Site; and

14.4.3 the New Works Site.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

14.5 The Company shall implement liaison procedures as required by Part 8 to Schedule 2 of the Agreement, including a Community Liaison Officer and Community Liaison Team.

14.6 Notwithstanding the other requirements of this Agreement, the Company shall liaise with:

14.6.1 Traffic Scotland;

14.6.2 AA Roadwatch;

14.6.3 Radio Scotland;

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14.6.4 local roads networks; and

14.6.5 Traffic Link;

with regard to planned works, lane closures and exceptional lane closures.

## **15 Payment of Fees and Compliance with Undertakers and Other Owners of Apparatus**

15.1 The Company shall:

15.1.1 give all notices;

15.1.2 take all actions; and

15.1.3 pay all fees;

required to be given or paid by any statutory requirements in relation to the execution of the New Works and by the rules and regulations of Undertakers and other owners of Apparatus and/or Relevant Authorities whose property or rights are or may be affected in any way by the New Works.

## **16 Quality Assurance**

16.1 The Company shall institute and maintain a Quality System complying with the requirements of Schedule 5 for the purpose of ensuring and demonstrating that all aspects of the New Works are carried out fully in conformity with the relevant provisions of this Agreement.

## **17 General Road Safety Audit Requirements**

### **17.1 General**

17.1.1 Road Safety Audits shall be carried out in accordance with the DMRB as amended by the requirements below.

17.1.2 Road Safety Audit Certificates appropriate to each Road Safety Audit carried out shall be provided to the Contracting Authority as required by the Certification Procedure.

### **17.2 Safety Audit Team**

17.2.1 The Company shall request approval of the Road Safety Auditor, together with the names and curriculum vitae of the proposed Safety Audit Team, in accordance with the Certification Procedure.

17.2.2 Once approval of all the Road Safety Auditor and all prospective members is obtained, the Company shall appoint the Road Safety Auditor which will appoint the Safety Audit Team in accordance with paragraph 17.2.1.

17.3 For the purposes of the DMRB: HD 19 the "Project Sponsor" shall be construed in the Agreement as meaning the Company.

17.4 For the purposes of the Road Safety Audit procedures the "Director" shall be construed, in the case of Trunk Roads, in the Agreement as meaning:

Director of Major Transport Infrastructure Projects

Transport Scotland

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or other such person notified in writing by the Contracting Authority, and accordingly the final decision shall rest with him with respect to issues in any Exception Reports.

- 17.5 For the purposes of the Road Safety Audit procedures the “Director” shall be construed, in the case of Aberdeen City Council Side Roads, in the Agreement as meaning:

Head of Enterprise, Planning and Infrastructure

Aberdeen City Council

or other such person notified in writing by the Contracting Authority, and accordingly the final decision shall rest with him with respect to issues in any Exception Reports

- 17.6 For the purposes of the Road Safety Audit procedures the “Director” shall be construed, in the case of Aberdeenshire Council Side Roads, in the Agreement as meaning:

Head of Roads and Landscape Services

Aberdeenshire Council

or other such person notified in writing by the Contracting Authority, and accordingly the final decision shall rest with him with respect to issues in any Exception Reports

### **17.7 Stage 1 Road Safety Audit**

- 17.7.1 The Conceptual Design shall include a completed Stage 1 Road Safety Audit.

- 17.7.2 Any proposal by the Company to vary the Conceptual Design shall be the subject of a Stage 1 Road Safety Audit in accordance with the Certification Procedure.

### **17.8 Stage 2 Road Safety Audit**

- 17.8.1 The Design for the New Works shall, on its completion and before commencement of construction, be subject to a Stage 2 Road Safety Audit. The Stage 2 Road Safety Audit may be phased using the following zones of interest:

- (i) road layout, earthworks, drainage, services, Structures, and Accommodation Works;
- (ii) fencing and environmental barriers;
- (iii) road pavement, kerbs, footways and paved areas;
- (iv) road restraint systems;
- (v) signs, road markings, motorway communications and lighting; and
- (vi) environment and landscape.

- 17.8.2 These zones of interest may be further divided into packages for sections of the New Works if agreed in writing by the Contracting Authority.

- (i) The Company shall submit to the Safety Audit Team the following information relating to the parts of the Design Elements for each zone of interest where relevant:
- (ii) 1:500 scale plans of the road layout showing all junctions, including verges and extent of side slopes; and
- (iii) plans showing road restraint systems (vehicular and pedestrian), bridge parapets, walls, Structures, signs (including locations and indicating face and

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pole arrangements), road markings, lighting, service diversions, drainage layouts, kerbs, footways, and all other road side features.

- 17.8.3 The Company shall supply the Safety Audit Team with any further information it may request.
- 17.8.4 The Company shall not construct the parts of the Design or Design Element subjected to a Road Safety Audit until the recommendations of the Stage 2 Road Safety Audit report including, where appropriate:
- (i) alternative solutions to the safety issues raised by the Stage 2 Road Safety Audit which have been agreed by the Safety Audit Team; and
  - (ii) any decision of the Director, as defined in HD19 of the DMRB, with respect to issues detailed in the Exception Report, as defined in HD19 of the DMRB;

have been incorporated in the Design or Design Element.

### **17.9 Stage 3 Road Safety Audit**

- 17.9.1 The Company shall carry out a Stage 3 Road Safety Audit immediately prior to any part of the New Works to be opened to traffic without TTMS and prior to the Company issuing a Substantial Completion Certificate for the relevant part of the New Works. The Road Safety Audit Stage 3 shall be carried out in connection with the full extent of any part if the New Works proposed to be opened to traffic without TTMS and for issue of a Substantial Completion Certificate.
- 17.9.2 The Company shall include a Stage 3 Cycle Audit with the Stage 3 Road Safety Audit, as described in paragraph 19.4.
- 17.9.3 The Company shall be responsible for ensuring that representatives of:
- (i) the Contracting Authority;
  - (ii) the Police;
  - (iii) the Relevant Authority responsible for the connections to the side road network;
  - (iv) the Scottish Ministers Trunk Road North East Management Units, as appropriate; and
  - (v) the Designers;
- are invited to accompany the Safety Audit Team to offer their specialist views for the Stage 3 Road Safety Audit.
- 17.9.4 Notwithstanding any other requirements of the DMRB, any views or observations made at the Road Safety Audit Stage 3 by the Contracting Authority the Police and any Relevant Authority shall be recorded in the Road Safety Audit Stage 3.
- 17.9.5 Before any part of the New Works is opened to traffic without TTMS and before a Substantial Completion Certificate is issued, the Company shall incorporate into the New Works the recommendations of the Stage 3 Road Safety Audit report including, where appropriate:
- (i) alternative solutions to the safety issues raised by the Stage 3 Road Safety Audit which have been agreed by the Safety Audit Team; and

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- (ii) any decision of the Director, as defined in HD19 of the DMRB, with respect to issues detailed in the Exception Report, as defined in HD19 of the DMRB.

**17.10 Stage 4 and Stage 5 Road Safety Audits (1 and 3 years after Completion)**

17.10.1 A Stage 4 and Stage 5 Road Safety Audit shall be carried out on all of the New Works in accordance with the DMRB.

17.10.2 A Stage 4 and Stage 5 Road Safety Audit report shall be prepared which include the following:

- (i) details of any specific safety problems identified through the traffic accident record analysis; and
- (ii) recommendations to address the problems highlighted.

17.10.3 The Company shall submit the Road Safety Audit Team's report in accordance with the DMRB to the Contracting Authority not later than 56 days following the end of the first and third years after completion.

17.10.4 The Company shall incorporate into the Design and the New Works those recommendations identified for its action in the Stage 4 and Stage 5 report including, but not limited to:

- (i) alternative solutions to the safety issues raised which have been agreed in writing by the Safety Audit Team; and
- (ii) any decision of the Director, as defined in HD19 of the DMRB, with respect to issues detailed in the Exception Report, as defined in HD19 of the DMRB.

17.10.5 Notwithstanding any other requirements of this Agreement, additional Design and works resulting from the recommendations of the Road Safety Audit Stage 4 and Stage 5 shall be carried out by the Company at its own expense.

**17.11 Road Safety Audits for Temporary Traffic Management Schemes**

17.11.1 Road Safety Audits Stage 2 and Stage 3 shall be carried out on Temporary Traffic Management Schemes that are judged by the Company, following discussions with:

- (i) Transport Scotland;
- (ii) Aberdeen City Council;
- (iii) Aberdeenshire Council; and
- (iv) the Police;

to be sufficiently complex or major to require audit. The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

17.11.2 Notwithstanding the provisions of Section 17.7.1 the Company shall also undertake audits of TTMS wherever instructed to do so by the Contracting Authority

17.11.3 The general procedures are as described above and modified as follows:

- (i) Road Safety Audit Certificates appropriate to each Road Safety Audit carried out on Temporary Traffic Management Schemes shall be provided to the Contracting Authority as required by the Certification Procedure.

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- (ii) At Road Safety Audits Stage 3 for Temporary Traffic Management Schemes, the Temporary Traffic Management Scheme shall be implemented and audited out with peak times as described in Appendix 1/17 to Part 4 of these New Works Requirements.
- (iii) At the audit the Safety Audit Team shall advise the Company of any alterations required to the Temporary Traffic Management Scheme and these shall be implemented by the Company to the satisfaction of the Safety Audit Team within no more than 12 hours of receipt of that advice.

**17.12 Cycle Audit**

- 17.12.1 The Company shall carry out Stage 2 and Stage 3 Cycle Audits in compliance with the requirements of *Cycling by Design*, published by Transport Scotland in June 2010.
- 17.12.2 Where the Company proposes any deviation from the requirements of Section 1.8 and Appendix D of Part 2 of these New Works Requirements, the Company shall undertake a Stage 1 Cycle Audit in compliance with the requirements of *Cycling By Design* (Transport Scotland, June 2010).
- 17.12.3 The Company shall undertake the Stage 2 Cycle Audit prior to the construction of any cycle facilities and any affected Works.
- 17.12.4 The Company shall integrate the Stage 3 Cycle Audit with the Stage 3 Road Safety Audit as a supplementary procedure.

**18 Departures**

- 18.1 Where the Company proposes to incorporate a Departure within the Design of the New Works, the Company shall seek the formal approval in writing of the relevant Overseeing Organisation. The Overseeing Organisation for existing and proposed Trunk Roads shall be Transport Scotland, Trunk Roads and Bus Operations. The Overseeing Organisation for existing and proposed adopted public roads shall be Aberdeen City Council and Aberdeenshire Council within their respective local authority boundaries.
- 18.2 The Company may seek a Departure where it can be shown that the safety of the Users, operational effectiveness and Design life are not compromised and that the General Requirements contained in this Part 1 of these New Works Requirements shall still be satisfied.
- 18.3 Applications by the Company for a Departure shall be made in accordance with the Certification Procedure.
- 18.4 Where a potential departure from Standards for an Access Road relates to its interface with an adopted road, an application for that departure from Standards shall be made to the relevant Overseeing Organisation.

Where a potential departure from Standards for an Access Road does not interface with an adopted public road, the Participant shall consult with the Contracting Authority to confirm the required technical standards to be provided.

**19 Superintendence by Company**

- 19.1 Notwithstanding the other provisions of this Agreement the Company shall supervise and witness the construction and completion of the New Works, and such supervision shall be independent of the supervision of the Designer and the New Works Contractor. In doing so the Company shall ensure an adequate level of supervisory staff shall be present on the New Works Site at all times to carry out



## Part 1: General Requirements

- such supervision duties required under this Agreement commensurate with the level and type of construction works being carried out at any particular time.
- 19.2 Notwithstanding the other provisions of this Agreement, the Company shall ensure that the Designer shall supervise and witness the construction and completion of the New Works sufficient to permit the Designer to sign all the relevant Construction Certificates referred to in the Certification Procedure.
- 19.3 In doing so the Company shall ensure that the Designer has the minimum levels of supervisory staff referred to in paragraph 19.4. This shall be the minimum staffing levels for the Designer's supervision of the New Works and shall be in addition to the Company's and the New Works Contractor's supervisory staff on the New Works Site.
- 19.4 Notwithstanding the other provisions of this Agreement, the Company shall ensure that a minimum of 39 staff from the Designer's organisation(s), shall be based on the New Works Site at all times throughout the period of the construction and completion of the New Works unless otherwise consented to in writing by the Contracting Authority, as detailed in paragraph 19.5.
- 19.5 The minimum experience and qualifications for the Designer's organisation(s) on-site core witnessing and supervisory staff identified in paragraph 19.4 shall be as all of the following:
- 19.5.1 1 Number Designer's Site Representative (DSR);
- (i) a chartered civil engineer with a minimum of 15 years relevant experience of site supervision as a Designer's site representative within the Design, construction and completion process;
- 19.5.2 4 Number Designer's Deputy Site Representatives (DDSR)
- (i) chartered civil engineers with a minimum of 10 years relevant experience of site supervision as a Designer's site representative within the Design, construction and completion process;
- 19.5.3 10 Number Designer's Section Engineer Representatives (DSER);
- (i) civil engineers with a minimum of 5 years relevant experience of site supervision as a Designer's site representative within the Design, construction and completion process;
- 19.5.4 8 Number Designer's Assistant Engineer Representatives (DAER);
- (i) civil engineers with a minimum of 3 years relevant experience of civil engineering works;
- 19.5.5 8 Number experienced and competent engineering works inspectors/clerk of works;
- (i) minimum 5 years' experience in the supervision of large civil engineering projects. At least 3 Number inspectors shall have a minimum of 10 years' experience of supervision of Structures construction, at least 2 Number inspector shall have a minimum of 10 years' experience of supervision of pavement construction and at least 2 Number inspectors shall have a minimum of 10 years' experience of supervision of earthworks construction;
- 19.5.6 1 Number Designer's Site Environmental Co-ordinator (DSEC)
- (i) the DSEC shall be a suitably qualified environmental specialist with a minimum 10 years' experience of the supervision of environmental compliance of civil engineering construction works

## Part 1: General Requirements

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- 19.5.7 1 Number Designer's Site Landscape Advisor (DSLAs);
- (i) the DSLA shall be a suitably qualified chartered landscape architect with a minimum 5 years' experience in the supervision of the landscape works.
- 19.5.8 1 Number Designer's Site Ecological Advisor (DSEA);
- (i) the DSEA shall be a suitably qualified chartered ecologist with a minimum 5 years' experience in the supervision of ecological works.
- 19.5.9 5 Number Designer's Environmental Clerks of Works (DECWs);
- (i) minimum 3 years' experience in the supervision of environmental works. At least two DECW shall be experienced in the supervision of landscape works, and at least two DECW shall be experienced in the supervision of ecological works.
- 19.6 The Company shall not be permitted to commence any New Works without adequate representation on the New Works Site by the Designer's organisation(s).
- 19.7 In addition to and to support the Designer's supervisory staff detailed in paragraph 19.5, the Company shall also ensure that the Designers supervisory staff include the following as required during relevant periods of the Works:
- 19.7.1 2 Number suitably qualified geotechnical/geological Designer's Section Engineer Representatives, with a minimum of 5 years relevant experience of site supervision as a Designer's site representative within the Design, construction and completion process, supported by 4 Number suitably qualified geotechnical/geological Designer's Assistant Engineer Representatives, with a minimum of 3 years relevant experience of geotechnical/geological works, who shall supervise geotechnical and geological works, including ground improvement works and general earthworks, including rock excavation works;
- 19.7.2 1 Number suitably qualified chartered archaeologist, with a minimum of 5 years relevant experience, supported by 2 Number suitably qualified archaeologists with a minimum of 3 years relevant experience, who shall supervise compliance with all cultural heritage provisions of this Agreement;
- 19.7.3 1 Number suitably qualified chartered landscape architect with a minimum of 10 years relevant experience who shall attend the New Works Site regularly throughout the Establishment Period and report in accordance with sub-Clause 3001.14 of Volume 1 of the MCHW. Not more than two weeks after each visit the chartered landscape architect shall make written recommendations to the Company regarding deficiencies and opportunities for improving the landscape maintenance and exploiting environmental opportunities that become apparent during the Establishment Period to enhance biodiversity and reduce pesticide application. A copy of the chartered landscape architect's written recommendations shall be provided simultaneously to the Contracting Authority. The chartered landscape architect shall confirm, without limitation, the requirements for plant replacement, establishment of woodland, shrub and hedgerow planting and all seeded grassland and wildflower areas and remedial works associated with the landscape Design. The recommendations of the Company's chartered landscape architect shall be carried out by the Company; and
- 19.7.4 additional engineer(s) and inspector(s) and otherwise for specialist works during the periods when such specialist works shall be undertaken, each of whom shall have a minimum of 5 years' experience of site supervision of similar specialist works.
-

## **20 Sustainability, Energy and Carbon Management**

### **20.1 General Sustainability Roles and Responsibilities**

- 20.1.1 The Company shall appoint a person with suitable experience in the delivery of sustainability measures on major infrastructure projects to act as the sustainability manager for the New Works. The appointment of this person shall be subject to the written approval of the Contracting Authority.
- 20.1.2 The sustainability manager shall work with the Contracting Authority to develop, manage and maximise the delivery of sustainability initiatives as part of the Project.

### **20.2 Reporting**

- 20.2.1 The sustainability manager shall produce a sustainability progress report for discussion at the monthly progress meeting with the Contracting Authority. The sustainability progress report shall include but not be limited to the following:
- (i) information on progress in delivering sustainability objectives and targets through the tracking of agreed appropriate key performance indicators, throughout the period between the Effective Date and the date of the Final Completion Acceptance Notice issued by the Contracting Authority pursuant to Sub-Clause 26 of the Agreement; and
  - (ii) sustainable materials planning (to include a comparison between estimated material quantities and quantities actually used, with a monthly report on the progress in delivering targets).

### **20.3 Training, Communications and Awareness**

- 20.3.1 The Company shall develop a training and communications programme to ensure that all operatives, staff and sub-contractors are aware of the sustainability, energy and carbon management objectives and targets associated with the Project and their responsibilities in this regard, and of any Site-specific issues.
- 20.3.2 The training and communications programme shall cover all the relevant elements associated with the following areas:
- (i) Energy Management
  - (ii) the Sustainable Resource Management Framework;
  - (iii) the Materials Plan;
  - (iv) the Responsible Sourcing Code of Practice;
  - (v) the Code of Practice for the Sustainable Use of Soil;
  - (vi) the Green Travel Plan; and
  - (vii) biodiversity protection and enhancement.

### **20.4 Sustainability, Innovation and Best Practice**

- 20.4.1 The Company shall produce a project log during the construction and completion of the New Works that shall identify any lessons learned with regards to the use of sustainable measures and associated best practice techniques. The Company shall review such measures on a monthly basis in conjunction with the Contracting Authority, and shall take appropriate steps to improve the procedures and strategies associated with their implementation where appropriate. The outcomes from each monthly review shall be presented to the Contracting Authority as part of the sustainability project report defined in Section 20.2.

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**20.5 Materials Specification**

20.5.1 The Company shall produce a Materials Register that sets out the key characteristics of the materials to be used within the New Works, including, but not limited to:

- (i) sourcing;
- (ii) durability;
- (iii) recyclability;
- (iv) ease of disassembly;
- (v) hazardous properties; and
- (vi) maintenance requirements.

20.5.2 This register will form the basis of addressing the following objectives:

- (i) to minimise to the extent reasonable and practicable throughout the New Works the amount of materials used, maximise the re-use of materials and prevent the unnecessary production of waste;
- (ii) to minimise to the extent reasonable and practicable the contribution made to the depletion of finite resources from the materials used throughout the New Works;
- (iii) to minimise to the extent reasonable and practicable throughout the New Works the use of hazardous materials and the impacts of any used; and
- (iv) to maximise to the extent reasonable and practicable throughout the New Works the use of materials and components that can be readily disassembled and re-used.

20.5.3 The Company shall register with the Zero Waste Scotland programme within a month of the Commencement Date, and work with Zero Waste Scotland to identify opportunities for optimising the use of recycled materials in the New Works.

20.5.4 The Company shall harmonise materials use with the Waste Management Plan in order to maximise the re-use of materials on the New Works Site.

**20.6 Materials and Resource Sourcing**

20.6.1 The Company shall produce a Responsible Sourcing Code of Practice for the New Works based on the BRE Sustainability Standard – BES 6001: Issue 2 Framework Standard for the Responsible Sourcing of Construction Products. This shall set out key principles and guidance in relation to supply chain management, stakeholder engagement, management systems and site stewardship relevant to the New Works.

20.6.2 The Company shall ensure that the Responsible Sourcing Code of Practice is in place within one month of the Effective Date and continually implemented until the date of the Final Completion Acceptance Notice issued by the Contracting Authority pursuant to Clause 26 of the Agreement and that it is implemented and adhered to. The code of practice shall ensure that the following objectives are met:

- (i) to source all materials responsibly; and
- (ii) to ensure that all timber-based products (either temporary or permanent) are sourced from Forest Stewardship Council certified (or equivalent) sustainably managed forests.

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**Part 1: General Requirements**

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**20.7 Transportation of Materials**

- 20.7.1 The Company shall prepare a materials transportation strategy that shall ensure that the impacts of transport caused by the transportation of materials to and from the New Works Site are kept to a minimum.
- 20.7.2 The Company shall give consideration to more sustainable forms of freight transport, including transportation by rail or sea. Where freight is to be transported by road, the Company shall demonstrate, where required by the Contracting Authority, that due consideration has been given to efficient route planning.

**20.8 Storage and Handling of Materials**

- 20.8.1 The Contractor shall produce, as part of the Waste Management Plan, a soil and associated materials handling and management plan to minimise the impact of soil and materials storage and handling on the environment. This shall be based on the Code of Practice for the Sustainable Use of Soil published by DEFRA in 2009.
- 20.8.2 The Contractor shall:
- (i) clearly identify all soil resources, grades of earthworks, fill and aggregate materials;
  - (ii) design appropriate storage areas for each category of soil, fill and aggregate material;
  - (iii) plan the location of storage areas to minimise transportation movements on the Site;
  - (iv) screen designed storage areas for environmental risk;
  - (v) ensure all stockpiles have suitably designed protection (e.g. seeding to prevent erosion); and
  - (vi) find a sustainable use for any surplus soils on the Site (both topsoil and subsoil).
- 20.8.3 The Company shall use appropriate storage methods for any construction materials.
- 20.8.4 The Company shall, where reasonable and practicable, select plant for use on Site which minimises the environmental impacts experienced. The impacts to be considered include, but are not limited to, material transfer, compaction and waterlogging.
- 20.8.5 The Company shall clearly explain and communicate the Code of Practice for the Sustainable Use of Soil and accompanying method statement to all relevant staff. Compliance with this code shall be checked and verified by the Company.

**20.9 Carbon Footprint Calculations**

- 20.9.1 The Company shall calculate an embodied carbon footprint for the New Works and this shall seek to better the agreed baseline carbon footprint calculated for the new Works.
- 20.9.2 The Company shall utilise and maintain the carbon calculator contained within the Transport Scotland Carbon Management System ("CMS") to monitor the embodied carbon footprint of the New Works.
- 20.9.3 During the construction and completion of the New Works, the Company shall track any deviations from the estimated carbon footprint calculated. Should any deviation

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**Part 1: General Requirements**

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occur which increases the carbon footprint being generated, the Company shall, to a reasonable and practicable extent, take appropriate actions to generate a corresponding reduction in the footprint.

**20.10 Energy Management**

20.10.1 The Company shall consider the energy consumption of the New Works during construction and formulate an energy management plan. This shall demonstrate actions taken to:

- (i) use energy efficient plant (after consideration of the use and maintenance of construction plant); and
- (ii) run an energy efficiency programme on Site (e.g. eliminating unnecessary heating, switch-off campaigns etc.).

20.10.2 The Company shall maintain all construction plant and ancillary equipment to maximise fuel efficiency and minimise as far as practicable carbon emissions.

20.10.3 The Company shall explore opportunities for using energy derived from renewable (i.e. low- or zero-carbon) resources during construction and where practicable implement them.

**20.11 Renewable Energy Strategy**

20.11.1 The Company shall develop an operational energy Plan detailing the energy requirements for the execution and completion of the New Works.

**20.12 Waste Management**

20.12.1 The Company shall, as part of the Waste Management Plan, produce an SWMP as specified in Schedule 5 of the Agreement. This shall cover all the regulatory and best practice requirements relating to the planning and delivery of Site waste management.

20.12.2 The Company shall have a specific documented approach to waste minimisation that will feature in the SWMP to ensure that no unnecessary waste arisings go to landfill. This will contain targets to reduce, re-use and / or recycle waste.

20.12.3 The Company shall, to the extent reasonable and practicable, ensure that effective waste minimisation and management shall also be delivered. Where appropriate, this shall be achieved through any arrangements made with Zero Waste Scotland.

**20.13 Water Management During Construction**

20.13.1 The Company shall consider the use of a rainwater recovery system in the design of the main construction compound and any satellite compounds required to facilitate the New Works. The design of this system shall include features to recover rainwater from all roofs and hardstandings. Where the implementation of such a system is not deemed viable, the Company shall justify the grounds for this decision in writing and seek agreement from the Contracting Authority in writing.

**21 Payment of Electrical Energy Charges**

21.1 The Company shall be responsible for payment of any electrical energy charges in relation to its own facilities, construction plant and equipment, long term and temporary office accommodation and compounds.

Part 1: General Requirements

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**22 Health and Safety**

- 22.1 In support of its approach to health and safety, the Company shall undertake the following in respect of the New Works:
- 22.1.1 The Company shall implement a behavioural safety programme for all personnel involved in delivery of the New Works Requirements with at least as great a focus on identifying unsafe conditions and safe behaviours as on identifying unsafe behaviours;
- 22.1.2 The Company shall be a member of the Constructing Better Health (CBH) scheme or equivalent, and shall use its best endeavours to ensure that all subcontractors of any tier involved in delivery of the New Works Requirements hold equivalent membership. The Company shall ensure that the CBH Standards for workplace health management, fitness for task assessment of safety critical and non safety critical personnel in line with the CBH Health Assessment Matrix, or equivalent, are implemented for personnel involved in delivery of the New Works Requirements, and that outcomes from the Health Checks are recorded in the CBH National Database or equivalent. The Company shall ensure that personnel undertaking duties within the New Works Site are registered with CBH or equivalent, and are issued with a CBH card, or equivalent;
- 22.1.3 The Company shall adopt the principles of the UK Contractors Group in respect of worker engagement, or equivalent, and shall use its best endeavours to ensure that all subcontractors of any tier involved in delivery of the New Works Requirements adopt these principles or equivalent. The Company shall ensure that worker engagement is supported at project, workgang and individual levels;
- 22.1.4 The Company shall ensure that personnel undertaking duties on the New Works Site have achieved particular levels of competence relevant to their role, as noted below:
- (i) All workers: To hold a Construction Skills Certification Scheme (CSCS) or CSCS Affiliate Card or equivalent. Workers involved in Scottish Water potable water elements of the project shall also hold National Water Hygiene Scheme and DOMS cards or equivalent;
  - (ii) Supervisors: Construction Skills Site Supervisor Safety Training Scheme or the Institution of Occupational Safety and Health (IOSH) Supervising Safely or equivalent;
  - (iii) Managers: Construction Skills Site Management Safety Training Scheme or IOSH Managing Safely or equivalent; and
  - (iv) Directors: IOSH Safety for Senior Executives or IOSH Directing Safely or equivalent.
- 22.1.5 The Company shall develop leading and lagging key performance indicators in respect of its health and safety activities, and shall monitor and report on performance against these key performance indicators on a monthly basis.



Aberdeen Western Peripheral Route / Balmedie-Tipperty  
AWPR/B-T Managing Agent, Aberdeen Business Centre,  
Willowbank House, Willowbank Road, Aberdeen AB11 6YG

Tel: **01224 332322** | Fax: **01224 322 361**

Email: **[enquiries@awpr.co.uk](mailto:enquiries@awpr.co.uk)** | Web: **[www.awpr.co.uk](http://www.awpr.co.uk)**

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# Aberdeen Western Peripheral Route / Balmedie - Tipperty

Competition for the Design, Build, Finance and Operation of the  
Aberdeen Western Peripheral Route / Balmedie - Tipperty

Volume Five

Schedule 2: New Works Requirements

Part 2: Specific Requirements – Connect Roads

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Part 2 Specific Requirements

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**1 Roads****1.1 General**

## 1.1.1 Design Speeds

- (i) The Design speeds to be adopted for the purpose of alignment Design shall be as shown in Table 1 of Schedule 19 of the Agreement.

## 1.1.2 Design Standards

- (i) Notwithstanding the other provisions of this Agreement, the Design of all new roads as described in Table 1 of Schedule 19 of the Agreement, with the exception of Accommodation Works Access Tracks, shall be in accordance with the DMRB unless noted otherwise.
- (ii) The Design shall be subject to the written acknowledgement of receipt by the Contracting Authority as required by the Certification Procedure.
- (iii) No affected part of the New Works shall commence until the appropriate Certification Procedures have been completed.
- (iv) The Company shall consult and comply with the requirements of:
  - (a) Aberdeen City Council; or
  - (b) Aberdeenshire Council;

as appropriate in connection with the Design for the Side Roads, as described in Table 1 of Schedule 19 of the Agreement.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

## 1.1.3 Cross Sections

- (i) Carriageway dimensions shall be as described in Table 1 of Schedule 19 of the Agreement.
- (ii) Changes in cross section between existing roads and the cross-section requirements of new roads as described in Table 1 of Schedule 19 of the Agreement shall be effected smoothly over a length sufficient for road Users to naturally follow the alignment of the lane lines ahead and to negotiate and adjust position relative to vehicles in adjacent lanes.

## 1.1.4 Horizontal Alignment

- (i) Subject to the other requirements of this Agreement the horizontal road geometry Design shall comply with the relevant design speed as described in Table 1 of Schedule 19 of the Agreement.
- (ii) The Design shall ensure that the horizontal alignment for all All Purpose Roads, Side Roads, Accommodation Works Access Tracks, New Access Roads / Tracks, New Means of Access, footways and cycle tracks and otherwise shall extend as a minimum to the Reference Points described in Table 1 and Table 2 of Schedule 19 of the Agreement and shown on the Reference Drawings and shall tie-in with the existing road network at or beyond these Reference Points.

## 1.1.5 Vertical Alignment

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- (i) Subject to the other requirements of this Agreement the vertical road geometry Design shall comply with the relevant design speed described in Table 1 of Schedule 19 of the Agreement.
- (ii) The Design shall ensure that the vertical alignment for all All Purpose Roads, Side Roads, Accommodation Works Access Tracks, New Access Roads / Tracks, New Means of Access, footways and cycle tracks and otherwise shall extend as a minimum to the Reference Points described in Table 1 and Table 2 of Schedule 19 of the Agreement and shown on the Reference Drawings and shall tie-in with the existing road network at or beyond these Reference Points.
- (iii) The vertical alignment of the main carriageway will need to account for specific requirements to ensure commitments given during scheme promotion are delivered as follows:
  - (a) In the Stoneyards area on the Balmedie – Tippetty section the top level of the bund / noise barrier adjacent to the northbound carriageway shall not exceed the following levels in order to maintain views from adjacent property:
 

|               |            |
|---------------|------------|
| Chainage 2900 | 72.70m AOD |
| Chainage 3000 | 72.00m AOD |
  - (b) In the Kirkhill area on the Balmedie – Tippetty section the top level of the bund/noise barrier adjacent to the northbound carriageway shall not exceed the following levels in order to maintain views from adjacent property:
 

|               |            |
|---------------|------------|
| Chainage 4450 | 67.10m AOD |
| Chainage 4500 | 66.00m AOD |
| Chainage 4550 | 65.90m AOD |
  - (c) At the Old Deeside Line in the Milltimber area of the AWPR Southern Leg the level of the main carriageway shall be such that it shall not preclude a clearance envelope of 6.45m to any future provision of a railway bridge across the AWPR in support of the re-opening of the Old Deeside railway line.

## 1.1.6 Side Roads

- (i) The Design of Side Roads shall be in accordance with the DMRB, Table 1 of Schedule 19 of the Agreement and the requirements of:
  - (a) Aberdeen City Council; and
  - (b) Aberdeenshire Council;
 as appropriate.
- (ii) Where short lengths of Side Roads form part of the New Works, unless otherwise described in Table 1 of Schedule 19 of the Agreement, the minimum cross section shall be equivalent to that of the existing road, with a minimum verge width of 2.5 metres.

## 1.1.7 New Access Roads/Tracks and Accommodation Works Access Tracks

- (i) The Design of all New Access Roads/Tracks as described in Table 1 of Schedule 19 of the Agreement, and Accommodation Works Access



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Tracks, shall include horizontal radii, vertical radii and curve widening to accommodate a combine harvester and trailer (minimum 19.020 metres long) and a farm tractor and hay wagon (minimum 19.020 metres long) except where otherwise specified in clause 1.1.7 (iv).

The maximum permissible vertical gradient for New Access Roads/Tracks, as described in Table 1 of Schedule 19 of the Agreement, and Accommodation Works Access Tracks as identified in Appendix 1/15 shall be 8% unless specifically consented to by the Contracting Authority or Land Owner respectively. The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement. Where New Access Roads/Tracks as identified in Table 1 of Schedule 19 of the Agreement, and Accommodation Works Access Tracks as identified in Appendix 1/15 shall be used by Non-Motorised Users, the maximum gradients identified in paragraph 1.8.2 shall be applied.

- (ii) New Access Roads/Tracks shall also be provided, as required, to give access to settlement, attenuation and storage ponds and otherwise in accordance with Section 1.5.
- (iii) Where New Access Road/Tracks are of access construction type AR3 as permitted in paragraph 1.7.5 Table 1C and connect to new or existing roads constructed from bound materials they shall be formed as AR1 or AR2 for a longitudinal distance of 10 metres from the connection with the new or existing road.
- (iv) At the New Access Roads/Tracks at Reference Points D95 to D96, D93 to D94, D97 to D98, and D99 to D100 the Design shall include horizontal radii, vertical radii and curve widening to accommodate an articulated vehicle with 7 axles (axle spacing of 1.3m on the trailer), 20m in length, approx. 3.5m wide with a gross weight of 80 tonnes. The Company shall consult and comply with the Forestry Commission in respect of this proposal.

#### 1.1.8 New Means of Accesses

- (i) In addition to any other provisions of this Agreement the provision of New Means of Access shall be in accordance with Table 3 of Schedule 19 of the Agreement.
- (ii) the Design shall ensure that:
  - (a) a longitudinal gradient of between 2.5% and 4% shall be provided on all accesses over a minimum length of 6 metres from either the adjacent or reference carriageway edge;
  - (b) unless specified otherwise in Schedule 19 all accesses shall be a minimum of 4 metres wide and shall incorporate a 1 metre minimum verge width on each side of the access;
  - (c) where a new access is replacing an existing access, the width of the new access and verges shall not be less than the existing widths;
  - (d) accesses shall extend from the edge of either the adjacent or reference carriageway for a minimum length of 10 metres or to either the adjacent or reference road boundary, whichever shall be the greater; and

## Part 2 Specific Requirements

- (e) The accesses shall be formed with the same materials and construction depth as the adjacent road.

## 1.1.9 Junction Design

- (i) The Design for junctions between roads including, but not limited to, those described in Table 1 of Schedule 19 of the Agreement and all accesses including, but not limited to, agricultural accesses and other roads controlled by Relevant Authorities shall be in accordance with the DMRB.
- (ii) Junctions shall have sufficient capacity to satisfy the junction performance criteria specified in Appendix F and Appendix G.
- (iii) Notwithstanding the requirements of paragraph 1.1.9 (ii), junctions shall be designed and operated to minimise future delay and disruption to road Users.
- (iv) Existing traffic movements shall be maintained and provision made to link the existing and new road infrastructures.
- (v) Notwithstanding the requirements of paragraph 1.1.9 (ii), the Design of merges and diverges for grade separated junctions shall as a minimum provide the geometric parameters for Rural Motorways, as described in Tables 4/3 and 4/4 of TD 22 of the DMRB, subject to the exceptions noted below:
  - (a) The Design of merges and diverges for the grade separated junction at A90 Blackdog Junction shall as a minimum provide the geometric parameters for Rural All Purpose roads, as described in Tables 4/3 and 4/4 of TD 22 of the DMRB.
- (vi) Major junctions to be provided are:
  - (a) A90 Stonehaven Junction;
  - (b) A956 Charleston Junction;
  - (c) A90 Cleanhill Junction;
  - (d) A90 Milltimber Junction (including connection to and junction with the A93);
  - (e) A90 South Kingswells Junction;
  - (f) A90 North Kingswells Junction (including connection to and junction with C89C Chapel of Stonywood to Fairley Road (2));
  - (g) A90 Craibstone Junction (including connection to and junctions with A96 and C89C Chapel of Stonywood to Fairley Road, and the junction between the A96, Dyce Drive and Craibstone College Access Road (North));
  - (h) A90 Goval Junction (including connections to and junctions with the realigned A947 and the B977 Echt to Balmedie Road(s));
  - (i) A90 Blackdog Junction;
  - (j) A90 Balmedie Junction;
  - (k) A90 Newburgh Road Junction; and
  - (l) A90 Tippetty Junction.

## 1.1.10 Police Observation Platforms

## Part 2 Specific Requirements

- (i) The Company shall consult and comply with the requirements of Police Scotland in respect of the location and layout of police observation platforms should they be required.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

- (ii) Police observation platforms shall conform with TA66/95 Type 2 or Type 3 should they be required.

#### 1.1.11 Maintenance Crossover Points

- (i) The Design shall include maintenance crossover points on the A90 AWPR and A956 AWPR as required, to permit the transfer of one Lane of traffic from one carriageway to the other in contraflow at a Design speed of 85 kph. A maintenance crossover point shall also be provided on the A956 east of Charleston Junction to permit the transfer of one Lane of traffic from one carriageway to the other in contraflow at a Design speed of 50 kph.
- (ii) The Company shall consult and comply with the requirements of Transport Scotland Trunk Road and Bus Operations and the relevant local roads authority as appropriate in respect of the locations of such crossovers.

#### 1.1.12 Lay-bys and Bus Lay-bys

- (i) An emergency lay-by shall be provided for each carriageway at a point between each new junction on new Special Roads and Trunk Roads

##### Fastlink

- Ch.2250 Both directions
- Ch.4850 Both directions
- Ch.7300 Both directions
- Ch.9050 Both directions

##### Southern Leg – Cleanhill to Charleston

- Ch.202900 Eastbound
- Ch. 202950 Westbound
- Ch.205400 Both Directions

##### Southern Leg – Cleanhill to North Kingswells

- Ch.105550 Southbound
- Ch. 105650 Northbound
- Ch.110300 Both Directions

##### Northern Leg –North Kingswells to Blackdog

- Ch.319700 Southbound
- Ch.319800 Northbound
- Ch.327950 Both directions

- (ii) General use lay-bys shall be provided on the Balmedie – Tippetty section at:

- (a) Ch 900 northbound;

## Part 2 Specific Requirements

- (b) Ch 1200 southbound;
  - (c) Ch 3000 southbound;
  - (d) Ch 3100 northbound;
  - (e) Ch 5700 southbound; and
  - (f) Ch 5900 northbound.
- (iii) Bus lay-bys shall be provided on:
- (a) the northbound diverge slip road and southbound merge slip road at A90 Blackdog Junction;
  - (b) the northbound merge slip road and southbound diverge slip road at A956 Charleston Junction; and
  - (c) on Dyce Drive northbound at the new signalised junction between Dyce Drive and the A96.
- (iv) Bus lay-bys shall comply with "Transport Scotland Disability Discrimination Act Good Practice Guide for Roads"
- (v) The Company shall consult and comply with the requirements of:
- (a) Aberdeen City Council;
  - (b) Aberdeenshire Council; and
  - (c) Bus service operators.
- as appropriate in connection with the Design for the Bus Lay-bys.
- The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.
- (vi) The existing northbound and southbound bus lay-bys on the A90 at Bridgend, Tipperty, and associated provisions (footpaths, kerbs, signs, bus shelters etc.), shall be retained in their entirety.
- (vii) Bus stops shall be provided on:
- (a) the westbound side of Eigie Road in Balmedie, comprising a Commutaports Cairngorm style, or equivalent, style bus shelter (3 bay enclosed with solar powered lighting and full size timetable case), sign, hardstanding and Kassel kerbs.
  - (b) the eastbound side of Eigie Road in Balmedie, comprising a Commutaports Cairngorm style, or equivalent, style bus shelter (3 bay enclosed with solar powered lighting and full size timetable case), sign, hardstanding and Kassel kerbs.
- (viii)

#### 1.1.13 Closure and Stopping up of existing Roads, Junctions, Accesses and Otherwise

- (i) Where closure of existing roads, junctions, accesses and otherwise shall be required by the Design or the Road Orders listed in Schedule 9 to the Project Agreement, the Design shall include, but shall not be limited to, the removal of existing hard materials and other features followed by reinstatement in materials and levels to match the adjacent existing verge, with the inclusion of suitable drainage.

## Part 2 Specific Requirements

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- (ii) The Design shall ensure that fencing and gates, associated with the closure of existing roads, junctions and accesses, are provided as appropriate to complement the requirements of Appendix 1/15 to Part 4 of these New Works Requirements.
  - (iii) The Design shall ensure that roadmarkings, signing and studs shall be removed to a suitable distance in advance of the end of any road stopped up as part of the New Works. Where appropriate they shall be replaced with suitable new roadmarkings and signing.
  - (iv) The Company shall consult and comply with the requirements of:
    - (a) Aberdeen City Council; or
    - (b) Aberdeenshire Council.as appropriate in connection with the Design for the 1.1.13 (iii)

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

## 1.1.14 Carriageway Tie-ins

- (i) The Design shall allow for the safe transition between new and existing carriageways.
- (ii) The tie-in Design shall be unique for the location with particular reference to road widths, design speed, alignment curvature and sight distances together with road markings, surface texture, signing and any other relevant Design criteria.
- (iii) Tie-ins to existing roads shall have verge widths as described in Table 1 of Schedule 19 of the Agreement to a point 10 metres from the limit shown on the Reference Drawings and thereafter the width shall taper linearly to the existing verge width.
- (iv) The Design for the carriageway at tie-ins to existing shall ensure a smooth horizontal and vertical alignment.
- (v) Where necessary the carriageway shall incorporate a taper of 1 in 20 to tie into the existing Side Road at the limit of the new Side Road construction.

## 1.1.15 Visibility Envelopes

- (i) The Design for visibility envelopes shall ensure that they have a layout and suitable surface to permit cyclic maintenance cutting of grass or other vegetation.
- (ii) Visibility envelopes shall not be obstructed by proposed or existing bridges, signing, landscaping. In addition, visibility envelopes on Side Roads shall not be obstructed in maintained areas of the verges and side slopes by grass to a height of 200mm; and in un-maintained areas of the verges and side slopes by grass to a height of 500mm and otherwise. Side Road maintained areas shall be a strip of verge and/or side slope one metre in width measured from the carriageway edge. Side Road un-maintained areas shall be areas of verge and/or side slopes out-with the maintained area.
- (iii) The Company shall consult and comply with the requirements of:
  - (a) Aberdeen City Council; or

Part 2 Specific Requirements

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(b) Aberdeenshire Council;

as appropriate in connection with the Design for the Visibility envelopes across side slopes and verges.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

#### 1.1.16 Turning Areas

(i) The Design shall include for turning areas at the ends of any New Access Roads/Tracks to any settlement, attenuation and storage ponds and otherwise.

(ii) Turning areas pavement shall be designed to the same standard as the adjacent road.

(iii) The Company shall consult and comply with the requirements of:

(a) Aberdeen City Council; or

(b) Aberdeenshire Council.

as appropriate in connection with the Design for the turning areas on Side Roads.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

#### 1.1.17 New Footways, Footpaths and Cycle Tracks

(i) The Design shall incorporate provision for the use of either existing or new roads and new footways and cycle tracks as described in Table 2 to Schedule 19 of the Agreement by non-motorised users. This shall include signing, dropped kerbing, road markings and otherwise.

(ii) Footways, footpaths and combined footway / cycle tracks in the New Works shall be designed, so far as is reasonably practicable, in accordance with "Transport Scotland, Disability Discrimination Act Good Practice Guide for Roads" and shall take into account mitigation measures in the Environmental Assessment Documents.

(iii) The Company shall apply the principles of Secured by Design to the design of temporary and permanent footpaths, cycle tracks and underpasses.

(iv) The Company shall consult and comply with the requirements of:

(a) Police Scotland Crime Prevention Design Advisor;

(b) Aberdeen City Council; and

(c) Aberdeenshire Council.

as appropriate, in connection with the above sub-clause.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

(v) Combined footway / cycle tracks shall also be designed in accordance with TA90 of the DMRB and "Cycling by Design" 2010, Transport Scotland.

(vi) The Company shall consult and comply with Network Rail with respect to providing pedestrian access between the ITS maintenance hardstanding

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**Part 2 Specific Requirements**

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on the Stonehaven Junction southbound diverge slip road and adjacent land in the ownership of Network Rail.

## **1.2 Site Clearance**

### 1.2.1 Site Clearance

(i) The Company shall consult and comply with the requirements of:

(a) Transport Scotland, Trunk Road and Bus Operations;

in connection with All Purpose Roads site clearance and with:

(b) Aberdeen City Council; and

(c) Aberdeenshire Council.

as appropriate, in connection with Side Road site clearance.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

(ii) The Company shall ensure that any trees and vegetation which shall be required to be felled to accommodate the Design shall be felled and disposed of with the exception of those required to fulfil the environmental, landscape and ecology requirements.

(iii) The Design shall include the removal of those buildings and Structures as described in Appendix 2/1 to Part 4 of these New Works Requirements.

### 1.2.2 General Site Clearance

(i) All existing roads, tracks, hard standing areas, kerbs, gullies, road lighting columns, electrical installation infrastructure, barriers, signage, existing Traffic Scotland Equipment and otherwise, made redundant as a result of the New Works, shall be removed to their full depth of construction, and the former location graded to appropriate levels and reinstated with subsoil and topsoil, to allow for planting or seeding to be undertaken in accordance with the landscape design.

(ii) Kerbs, gullies, lamp posts, barriers, signage and otherwise, made redundant as a result of the New Works within the limit of the Land Made Available for the New Works by the Scottish Ministers, and which are not located within landscaped areas shall be removed to their full depth of construction, and the former location reinstated in accordance with the Specification.

## **1.3 Fencing and Environmental Barriers**

### 1.3.1 General

(i) Notwithstanding any other provision of this Agreement all defective and damaged parts of any existing or temporary boundary treatments shall be immediately repaired to ensure that the New Works Site shall be stock proof and until such time as any walling, permanent fencing, Accommodation Works and accesses shall be completed.

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- (ii) Watergates on fencing shall be provided at all watercourse locations where stock proof fencing shall be provided, and shall include provision for passage by protected mammals including otter.
- (iii) The Design for all gates at accesses shall allow for the gates to open away from the carriageway only.
- (iv) Prior to works commencing in any area, the area shall be secured by either a temporary or permanent boundary treatment to delineate the boundary of the New Works Site in that area.
- (v) Notwithstanding the other provisions of this Agreement, the Company shall undertake a risk assessment on all fencing provision to confirm that this is appropriate to the location and adjacent land use and the fencing constructed should be as a minimum dependant on the characteristics of each specific area of construction. Where any conflict is identified with these New Works Requirements this shall be reported to the Contracting Authority.

## 1.3.2 Temporary Fencing, Gates and Otherwise

- (i) The Company shall consult and comply with each relevant landowner and tenant/occupier prior to work commencing on the New Works Site regarding the lengths of the New Works Site boundary which shall be required to have temporary stockproof fencing erected if the Company chooses this option.
- (ii) The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.
- (iii) The position of all gates and animal accesses shall also be agreed with each landowner and tenant/occupier at any particular location prior to work commencing at such location.
- (iv) The temporary fencing shall be either type 1 or 3 as shown on Drawings H1 and H2 in Volume 3 of the MCHW or as otherwise agreed by the landowner and tenant/occupier.
- (v) Where temporary or permanent gates are to be locked, the Company shall provide and install the locks. Two sets of keys for each lock shall be provided to the Contracting Authority

## 1.3.3 Permanent Fencing, Walling, Gates and Otherwise

- (i) The Design shall include fencing, to be provided and constructed on both sides of all Special Roads and all All Purpose Roads as described in Table 1 of Schedule 19 of the Agreement.
- (ii) The Special Road fence shall terminate at the end of each Special Road slip road adjacent to the GIVE WAY line, or equivalent, and shall be timber post and 5 rail as described in Drawing H3 in Volume 3 of the MCHW as a minimum. The All Purpose Road fence shall be timber post and 4 wire fence. Where an existing boundary fence is replaced as part of the New Works, the fence provided as part of the New Works shall be of equal provision to the existing fence as a minimum. The boundary fence, shall tie into existing fencing, temporary fencing or fencing as required by Appendix 1/15 to Part 4 of these New Works Requirements as appropriate.
- (iii) The Company shall consult and comply with the requirements of:



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- (a) Transport Scotland;
- (b) Aberdeen City Council; or
- (c) Aberdeenshire Council;

as appropriate in connection with all permanent fencing, walls, gates, fencing in environmentally sensitive areas, and otherwise to be constructed out-with those described in Appendix 1/15 to Part 4 of these New Works Requirements.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

- (iv) Notwithstanding the other requirements of this Agreement, as a minimum drystone walls for landscape and visual mitigation shall be provided as described in Appendix D.
- (v) The particular requirements in respect of the construction of drystone walls are as follows:
  - (a) Walls shall be constructed by suitably qualified and experienced drystone wallers;
  - (b) Wall Design and construction methods shall match local vernacular walling style and height for each specified location to ensure that new walls reflect the character and appearance of walls within the local area;
  - (c) The Company shall identify the different styles of existing drystone walling that reflect the changes in character along the route and construct sample sections of drystone wall for each location for approval by the Contracting Authority prior to construction; and
  - (d) Stone shall be sourced from the local area and re-used where available from walls required to be demolished as part of the New Works.
- (vi) Outwith those fences, walls, gates and otherwise described in paragraphs 1.3.3(i) and 1.3.3(ii) and those required by Appendix 1/15 to Part 4 of these New Works Requirements, permanent fencing, gates and otherwise shall be provided in the Design at the following locations and tied into adjacent fencing where appropriate:
  - (a) where storage, attenuation or settlement ponds or otherwise shall be formed as part of the drainage measures, a risk assessment shall be carried out by the Company to determine an appropriate form of fence to be designed, constructed and completed and access provided via a lockable gate which shall be as a minimum 3.6 metre wide as shown on Drawing H17 in Volume 3 of the MCHW.

Consideration shall be given to the movement of wildlife to and from the storage, attenuation or settlement pond or otherwise when considering the form of fencing;
  - (b) at any gaps in the boundary fencing, along the full length of the New Works, not described elsewhere in these New Works Requirements, this fencing shall be timber post and 4 wire as a minimum unless required otherwise by the Relevant Authorities to match adjacent sections of fencing;

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- (c) at the back of the east verge of the New B977 Echt to Balmedie Road (5), extending south for 125 metres from the southern end of the east parapet of the B977 Echt to Balmedie East Overbridge (PS57). This fencing shall consist of a green coloured medium knitted shade mesh providing a minimum of 45% screening/wind reduction or approved equivalent, 2 metres in height above ground level. The mesh shall be mounted on a 2 metre high post and seven wire fence.
- (vii) Unless otherwise stated no elements of the fencing, whether above or below ground level, shall extend beyond the permanent Land Made Available by the Scottish Ministers boundary.
- (viii) The location of fencing in the Design shall ensure a smooth and flowing vertical and horizontal alignment.
- (ix) Where permanent fencing, other than Accommodation Works fencing, shall be indicated in the Design along the boundary of the Land Made Available by the Scottish Ministers for the New Works, the fence shall be set parallel to the boundary with the fence posts contiguous to the boundary and with the fence within the Land Made Available by the Scottish Ministers for the New Works.
- (x) Where fencing as required by Appendix 1/15 of Part 4 of this Schedule 2 is provided at the boundary of the Land Made Available by the Scottish Ministers for the New Works the requirements of paragraph 1.3.4 (vii) shall be adjusted as necessary to allow maintenance of each fence and of the land within the Sites.
- (xi) Notwithstanding any other provisions of this Agreement, the Company shall ensure that the line of the permanent fence shall be set out in such location as shall have been agreed by the Contracting Authority prior to any fencing works having commenced.
- (xii) The location and erection of any fencing works in environmentally sensitive areas shall be agreed with the Contracting Authority before such works have commenced.

## 1.3.4 Fencing for Wildlife

- (i) Fencing for wildlife shall include but not be limited to:
- (a) Badgers;
  - (b) Otters;
  - (c) Deer; and
  - (d) Rabbits
- (ii) Protected mammals - Otter and Badger

The Design shall ensure that fencing shall be provided adjacent to wildlife tunnels, underpasses, wildlife bridges and ledges to guide protected mammals to the tunnel, wildlife bridge underpass and ledge entrance.

The Company shall consult and comply with Scottish Natural Heritage in respect of requirements for fencing around SUDS storage, attenuation or settlement ponds to make them otter proof to mitigate against the risk of bioaccumulation of toxins from ponds by otters.

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The Company shall also consult and comply with the requirements of Scottish Natural Heritage with regard to the design, location and extent of fencing for protected species.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of these requirements.

Noise fences and barriers shall have an underground anti-burrow deterrent attached to the base of the barrier where required in accordance with Specification Appendix 30/12.

(iii) Rabbit Fencing

In addition to the areas described elsewhere in these New Works Requirements, where the Company considers that planting areas may be at risk of being damaged by rabbits, such areas shall be enclosed by permanent fencing in accordance with Specification-clause 370AR 1.2.

(iv) Deer Fencing

In addition to the areas described elsewhere in these New Works Requirements, where the Company considers that deer proof fencing is required to reduce the risk of motor vehicle collisions or to prevent damage to planting areas, such fencing shall be installed in accordance with Specification clause 370AR 1.3.

1.3.5 Noise Fences and Barriers

- (i) The Design shall ensure that noise fences and barriers shall be constructed as soon as practicably possible after commencement of the New Works to assist in mitigating construction impacts and to afford the maximum benefit to any affected receptor.
- (ii) The design of environmental barriers shall be undertaken by the Company in accordance with the Barrier Assessment Framework set out in HA 65 of the DMRB, and shall include provision for their function as mammal proof barriers as required by Specification Appendix 30/12.
- (iii) Notwithstanding the requirements elsewhere in these New Works Requirements, the Company shall employ a landscape architect or architect to advise on the design of the form of the environmental barriers. The aesthetic requirements for environmental barriers are included in Appendix E.
- (iv) The environmental barrier design shall take into account, as a minimum, durability, weathering, the extent to which materials are resistant to vandalism and graffiti, and the long term maintenance of the environmental barriers.
- (v) The design shall ensure that the environmental barriers are integrated physically and visually with other infrastructure for the scheme including, signs, lighting columns, bridge parapets, retaining walls, Traffic Scotland Equipment (TSE), restraint systems, CCTV cameras and equipment.
- (vi) The design of environmental barriers shall:
  - (a) as far as practicable, minimise adverse visual impacts for surrounding properties and outdoor receptors (footpaths, bridle paths, cycle routes, local roads and areas used for outdoor recreation);

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- (b) reflect / enhance the local landscape character on either side of the carriageway;
  - (c) provide the road user with varied and interesting views where possible, in particular avoiding long, monotonous stretches of barrier;
  - (d) assist in screening views of the road and traffic from nearby visual receptors; and
  - (e) enhance the local environment through the use of a sympathetic form, colour and texture.
- (vii) Where localised dips in ground level occur, a continuous barrier top height shall be maintained and the void beneath in-filled with earthworks.
- (viii) The Design shall ensure the provision of gates, located at appropriate points within barriers, at intervals not exceeding 200 metres. The gates shall be provided to allow access for routine maintenance of the New Works and associated features and landscaping and also to allow escape routes for members of the public in the event of an incident on the adjacent carriageway. Approximately 2.0 square metres of approved hard standing shall be provided at the front and rear of each gate in order to prevent growth of vegetation and to aid identification of access points/escape routes. Escape routes shall be appropriately signed with emergency exit type signing at points on the carriageway side of the barrier between the gates and on the carriageway side of the gate itself.
- (ix) Except where otherwise specified in these New Works Requirements concrete or opaque plastic noise barriers shall not be acceptable.
- (x) Except where otherwise specified in these New Works Requirements, close-boarded timber noise barrier fencing shall only be acceptable if it meets the following criteria:
- (a) Metal fence posts shall not be acceptable unless they are hidden on both sides to give the appearance of an uninterrupted timber face across posts and panels, unless otherwise agreed with the Contracting Authority;
  - (b) Transitions between barriers of different heights and the ends of barriers and the ground shall slope at a gradient not steeper than one in two; and
  - (c) Vertical timber boards shall extend the full height of the barrier. Horizontal joints between vertical boards or panels with vertical boarding shall not be acceptable.
- (xi) The Design shall ensure that environmental barriers are sited as close to the edge of carriageway as possible so as to maximise their performance, taking account of all other requirements including, but not limited to:
- (a) Required minimum verge widths, sight lines and other relevant standards and requirements;
  - (b) the need to reduce the visual 'canyon' effect where long stretches of environmental barrier are close to the road edge; and
  - (c) other requirements (such as lighting and signing, utilities, geotechnical constraints, and the like).

## 1.4 Road Restraint Systems (Vehicular and Pedestrian)

1.4.1 The Company shall consult and comply with the requirements of:

- (i) Aberdeen City Council; and
- (ii) Aberdeenshire Council;

as appropriate, with regard to all road restraint systems on Side Roads, and connections/transitions to any existing road restraint systems on Side Roads.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

1.4.2 The Company shall provide, within the extent of the New Works Site a compliant Vehicle Restraint System (VRS) in accordance with TD 19. Where sections of existing barrier can be demonstrated to comply with this standard then the Company shall also demonstrate that the residual life of the VRS meets the criteria described in Schedule 4.

1.4.3 In addition to undertaking the Design and a vehicle restraint risk assessment in accordance with the criteria for the provision of safety barriers, parapets, guardrails and the like as set out in TD 19 of the DMRB, the Company shall carry out a further risk assessment to determine any areas, within the Design, where additional safety barriers, vehicle and pedestrian parapets, pedestrian guardrails, and the like are required.

1.4.4 Unless protected by a VRS, sign posts, lighting columns and the like shall be designated passively safe so as to require no protection in accordance with TD19. Where passively safe sign posts, lighting columns and the like are used they shall conform to testing as detailed in BS EN 12767:2007. Where additional hazards exist in tandem with any sign posts, lighting columns and the like a VRS shall be required in accordance with the Design. In such circumstances any sign posts, lighting columns and the like placed behind the VRS, out-with the VRS working width, may be designated as not passively safe.

1.4.5 Where reinforced soil Structures or other Structures utilising precast soil retaining panels shall be provided in the Design adjacent to the carriageway, the fixing of VRS directly to these precast panels shall not be permitted in the Design.

1.4.6 VRS in the Design shall be designed, constructed and completed to ensure that a smooth and flowing vertical and horizontal alignment shall be achieved on the arrival to, and the departure from, any Structure.

1.4.7 TD19 of the DMRB states that working width shall be described by the Design Organisation. For the purposes of this Agreement, Design Organisation in this context shall be the Designer.

1.4.8 Notwithstanding the requirements of TD19 of the DMRB, any VRS incorporated in the Design shall have an impact severity level of either A or B as described in Table 3 of BS EN 1317-2 together with the relevant test report results to demonstrate that the appropriate index values have been achieved.

1.4.9 VRS located in the central reserve of the All Purpose Dual Carriageway shall have a containment level of H1 or greater.

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- 1.4.10 At any new central reserve maintenance crossover the central reserve VRS shall be removable. The removal of the VRSs shall not be detrimental to the effectiveness of the adjacent sections of the VRS.
- 1.4.11 Unless noted otherwise, gaps of less than 100 metres in the verge VRSs shall be in-filled with a similar type of VRS to the adjacent lengths.
- 1.4.12 Where hard standings result in a gap in a VRS, a VRS shall be provided at the back of the hard standing and overlapped so as to remove the risk of vehicles passing through the gap.
- 1.4.13 Galvanised pedestrian guardrails shall be provided at appropriate locations and, in particular, at locations where a footpath, access path or hard standing is adjacent to an embankment drop.
- 1.4.14 A galvanised pedestrian guardrail shall be provided between the south footpath/cycle path on Milltimber Brae Overbridge within the extents of the PS16 Milltimber Brae Overbridge structure. The pedestrian guardrail shall be high visibility with a see through top panel.
- 1.4.15 Staggered pedestrian guardrail (chicane layout) shall be provided at the southern extent of the Balmedie – Belhelvie cyclepath.
- 1.4.16 Bollards shall be provided at the southern end of the New Access Road /Track to New means of access E264, at the point of commencement of the New Footway/Cycleway from Balmedie to Easter Hatton Link.

## 1.5 Drainage and Service Ducts

- 1.5.1 The Company shall consult and comply with the requirements of the Scottish Environment Protection Agency (SEPA) to obtain the necessary licences, approvals and otherwise to enable the Design, construction and completion of the New Works and with respect to complying with the requirements of the Water Environment (Controlled Activities) Regulations 2011 (CAR).

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

The Company shall also provide a copy of the relevant licences, registrations and otherwise as required under CAR to the Contracting Authority prior to commencement of the relevant New Works.

### 1.5.2 Drainage

- (i) The Design shall ensure that the continued and uninterrupted flow of all watercourses is maintained throughout the construction of the New Works.
- (ii) Notwithstanding any other provisions of this Agreement, the Company shall, prior to the commencement of the New Works, give 10 days written notification to SEPA of the intended date for the commencement of the New Works.
- (iii) The Company shall consult and comply with the requirements of SEPA with respect to the Design including, but not limited to, drainage outfalls, culverts, all works on inland waters and pollution control.

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- (iv) The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.
- (v) The Company shall not discharge water from the New Works Site on either a temporary or permanent basis until it has consulted and complied with the requirements of all interested parties including, but not limited to:
- (a) SEPA;
  - (b) Scottish Natural Heritage (SNH);
  - (c) Scottish Water;
  - (d) Transport Scotland
  - (e) The Scottish Ministers Trunk Road North East Management Unit;
  - (f) Aberdeen City Council; and
  - (g) Aberdeenshire Council;
- as appropriate within their respective boundaries.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

- (vi) The Company shall consult and comply with the requirements of:
- (a) Aberdeen City Council;
  - (b) Aberdeenshire Council;
  - (c) Transport Scotland;
  - (d) The Scottish Ministers Trunk Road North East Management Unit; and
  - (e) Scottish Water.

as appropriate, with respect to the Design of the New Works drainage.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

- (vii) The New Works drainage system for Phase 1 of AWPR/B-T shall incorporate the drainage from the A96 Park & Choose link road and shall also incorporate an outfall pipe for the A96 Park and Choose SuDS basin outfall chamber which shall cross the A96 to Green Burn. The A96 Park & Choose works are being procured separately from the AWPR/B-T by Aberdeen City Council. The Company shall consult and comply with Aberdeen City Council in respect of this requirement. The Company shall provide Consultation Certificates in accordance with the Certification Procedure in this respect.

### 1.5.3 General Requirements.

- (i) The Design for all roads, except Side Roads, shall take account of the Construction Industry Research and Information Association (CIRIA) Report C697 "The SuDS Manual". The SuDS Design for the Side Roads shall be in accordance with the requirements of the relevant roads authorities. The Design shall ensure that on all un-kerbed roads, with the exception of Accommodation Works Access Tracks, surface water drainage and ground water drainage shall be in accordance with Drawing B1 and B15, Type X, to Volume 3 of the MCHW except the sub-base

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material above the drain and contiguous with the carriageway specified in detail Type X on drawing B15 shall be substituted by 75 millimetres nominal size 'Type B' crushed rock (gravel shall not be permitted) for a depth of 300 millimetres.

- (ii) The Design shall ensure that drainage on footways, footpaths, cycle tracks, combined footways/cycle tracks, Accommodation Works Access Tracks, New Access Roads/Tracks, New Means of Access and otherwise shall remove surface water and sub-surface water to at least 450 millimetres below finished track/path levels.
- (iii) The minimum pipe diameter for all drainage systems in the Design shall be 150 millimetres except for cross carriageway drainage where the minimum diameter shall be 300 millimetres and pre-earthworks drainage where the minimum diameter shall be 225 millimetres.
- (iv) The Design shall ensure accessibility for inspection and maintenance. All drainage systems shall have adequate facilities for rodding and jetting.

Rodding eyes shall not be permitted.

The maximum distance between access points on lengths of pipe shall be 90 metres. The maximum distance between access points on lengths of combined kerb and drainage units shall be 45m.

Access chambers shall have a diameter not less than 1050 millimetres. Chamber diameters and depths and the use of step irons, rungs and ladders shall conform to the requirements given in Table NA22 of BS EN 752:2008 if not detailed within the HCD.

The plan area of all manholes and catchpits which shall be required in the Design shall not be permitted within the road pavement of any roads.

- (v) Pipe flow velocities shall not be less than 0.75 metres per second at any point and not greater than 2.5 metres per second at pipe discharge points.
- (vi) All pipes under carriageways less than 1.2 metres below the finished road level (measured from the finished road level to the soffit of the pipe) shall be encased in concrete of minimum thickness 150 millimetres.
- (vii) Drainage in the Design shall be provided to intercept water, field drains and slope drains and otherwise at the top of cuttings where the adjacent land falls towards the cutting, on cutting berms, at the bottom of embankments and in the verges.

Where the road is in cutting, less than two metres below original ground level, drainage at the top of the cutting may be omitted as long as there is a verge drain at the toe of the cutting.

Subsurface drainage shall be provided within the central reserve and verges of all new All Purpose Roads and Side Roads as appropriate in respect of road camber.

Notwithstanding the above, the soffit of the subsurface drain shall be located at a minimum depth of 300 millimetres below formation, or where a capping layer is to be adopted in the Design, at a minimum depth of 300 millimetres below sub-formation.

Lining of cut-off ditches shall be in accordance with paragraph 1.6.1 (xii).



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- (viii) Where land drains are encountered in the construction of the New Works such drains shall be intercepted and connected to an outfall via a drainage system.
- The Company shall record and photograph the position of each land drain when intercepted, provide this information to the Contracting Authority and include in the As Built Information
- The Company shall consult and comply with the requirements of all landowners and tenants/occupiers in respect of land drain connections. The landowner and tenant/occupier shall be permitted to inspect severed land drains and their connections prior to backfilling.
- Notwithstanding this requirement the Company shall provide a connection to the drainage system which is coincident with low points in the adjacent fields. Where these connections are provided they shall be marked at ground level by a 300mm x 300mm precast concrete marker slab.
- The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.
- (ix) Side slopes shall be drained where egress of groundwater is encountered, or is likely to be encountered.
- (x) The Design shall ensure that drainage is provided in areas where there is potential for erosion or ponding which would be detrimental to the safe operation of the carriageway and/or long term stability of the New Works.
- (xi) The Design shall allow for the proper treatment of all surface water and road runoff within the limits of the New Works Site.
- (xii) The Company shall take due regard and make allowance in the Design, construction and completion of the works for the areas throughout the New Works Site and adjacent areas which are susceptible to flooding to avoid inconvenience to adjacent landowners and tenants/occupiers. No increase in flood risk in the vicinity of the New Works Site shall be permitted.
- (xiii) The Company shall monitor ground conditions to ensure effective functioning of all field drainage.
- (xiv) The use of surface water concrete open channels, fin drains and narrow filter drains shall not be permitted in the Design.
- (xv) The use of linear drainage channels shall not be permitted in the Design.
- (xvi) The Design shall ensure that where filter drains in the road verge and central reserve are designed to intercept surface run-off, the top surface of the filter material shall be between 25 millimetres and 50 millimetres below the adjacent finished verge or carriageway level.
- The exposed stone shall be 75 millimetres nominal size 'Type B' crushed rock (gravel shall not be permitted) for a depth of 300 millimetres. This filter material shall extend to the carriageway edge.
- (xvii) Where filter drains shall be remote from the carriageway edge the top surface of the filter material shall extend to finished ground level.
- (xviii) The Design shall ensure that new manhole or catchpit covers which shall be required in the Design, shall not be permitted within the road pavement of all roads described in Table 1 of Schedule 19 of the Agreement.

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- (xix) The Design shall ensure that all gully, catchpit and manhole grates, covers and frames shall comply with BS EN 124 with the following provisos:
  - (a) Class A15 shall not be permitted;
  - (b) Class D400 shall be used as a minimum standard for ironwork located within the carriageway or areas accessible to vehicular loading; and
  - (c) Gullies shall be of the trapped type, in-situ cast to Drawing F13 of Volume 3 of the MCHW, and shall have a double triangular, non-rock grating and frame with clear opening 434 x 434 millimetres bedded in mortar.
- (xx) The Design shall ensure that all kerbed roads have a positive drainage system such as gullies.
- (xxi) Where gullies are used in the Design, double gullies or additional combinations of gullies shall be provided at sag points.
- (xxii) Subject to the other provisions of this Agreement all surface water drainage in the Design shall be designed in accordance with the Modified Rational Method.
- (xxiii) Notwithstanding the general requirements noted above, Grassed Surface Water Channels (GSWC) for Highway Runoff shall be permitted subject to the following provisions:
  - (a) GSWC shall only be permitted for use on longitudinal gradients between 1 in 200 and 1 in 50;
  - (b) GSWC shall not be permitted for use on embankments greater than six metres in height;
  - (c) Where sub-surface drainage is required as part of a GSWC design it shall be provided as a filter drain;
  - (d) The interaction of GSWC with other design elements such as road restraint systems and active and passive TSE shall be considered in determining the extent of any length of GSWC; and
  - (e) The Company shall consult and comply with the Contracting Authority in respect of proposals for the design of GSWC.

#### 1.5.4 Existing Drainage

- (i) All existing drainage pipework within one metre of carriageway formation level which shall become redundant as part of the New Works, shall either be excavated and removed from the New Works Site or grouted up.
- (ii) All existing drainage pipework over one metre below formation level and greater than 375 millimetres in diameter, which shall become redundant as part of the New Works shall be completely in-filled with pulverised fuel ash cement grout or equivalent.
- (iii) The Company shall maintain all existing foul and surface water drainage or suitable temporary drainage until the permanent drainage for the New Works is installed and functioning in accordance with other provisions of these New Works Requirements.

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- (iv) Ground profiles shall at all times be maintained to shed surface water efficiently and directly into the nearest drain and to prevent penetration of water into or below existing pavements.
- (v) Where any existing drainage shall be incorporated within the New Works as part of the Design, the Company shall consult and comply with the requirements of all interested parties including, but not limited to:
  - (a) SEPA;
  - (b) Aberdeen City Council;
  - (c) Aberdeenshire Council; and
  - (d) Transport Scotland;

as appropriate to demonstrate that the existing drainage shall fulfil the Design requirements.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

#### 1.5.5 Drainage Outfalls

- (i) The Design shall ensure that discharge of the drainage system does not adversely affect downstream pipes, culverts, watercourses, fish farms, static water bodies, reed beds and otherwise.

Where the Design incorporates a connection to an existing drainage system, it shall be controlled or attenuated to ensure that there shall be no adverse effect on downstream pipes, culverts, watercourses, fish farms, static water bodies, reed beds and otherwise.

The Design shall allow for the upgrading of existing drainage systems which may be required as a result of such connections.

- (ii) Outfalls to watercourses in the Design shall incorporate measures between the end of the pipe and the watercourse to dissipate and reduce the velocity of the discharge.

The Design of such measures shall prevent erosion and scour and shall sustain grass or aquatic vegetation.

- (iii) The Design shall ensure that provision shall be made to facilitate safe access to each drainage outfall for inspection and maintenance purposes.

#### 1.5.6 Drainage Culverts

- (i) A culvert shall mean a cross carriageway drain servicing an open drainage system and such culvert Design shall have a minimum diameter or height of 1200 millimetres.
- (ii) All culverts shall be designed in accordance with CIRIA Report C689 "Culvert Design and Operation Guide" (2010) except that all culverts Design shall be for the 1 in 200 years flood peak discharge flow of the watercourse.

The Design of the culvert shall accommodate the Design flow in a free flowing condition allowing for a minimum freeboard of 300mm in accordance with CI 2.7.21.8. The culvert Design shall also consider the impact of culvert geometry on flood risk in accordance with CI 1.5.11.

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Notwithstanding the other provisions of this Agreement, the Design for all culverts shall also be in accordance with the Design Guidance Booklet: "Rivers crossings and Migratory Fish" – A Consultation Paper, produced by the Scottish Executive (April 2000).

All culvert Design shall encourage use by wildlife such that all fish species and mammals associated with the watercourse may pass freely through the culvert.

Culverts shall be designed to operate under sub-critical, free flow conditions.

Bends, steps, changes in culvert slope and cross section shall not be permitted in the Design except in the re-alignment of the existing Megray Burn Culvert which passes under the proposed PS01 Bridge Structure in which case bends shall be permitted.

- (iii) The Design shall ensure that, where an existing culvert shall be replaced or extended, the new culvert shall be no less in dimensions and capacity than the existing culvert.

- (iv) All new culverts shall have a formed concrete headwall at both the inlet and outlet.

All culvert headwalls shall be located a minimum of 2.0 metres beyond the back of the adjacent road verge.

Headwalls in the Design shall be designed as Structures.

- (v) The Design shall ensure that measures shall be taken at watercourses to prevent livestock entering all culverts.

- (vi) The Company shall undertake a risk assessment to determine the provision or otherwise of trash screens and security screens at culverts.

- (vii) Culverts, where mammal ledges are required to be provided as part of the Design, shall be designed as Structures in accordance with Section 2.

The ledges shall be positioned not lower than 150 millimetres above the 1 in 25 year flood level and shall provide a minimum 600 millimetres headroom and 500mm width.

- (viii) The Company shall consult and comply with the requirements of:

- (a) Aberdeen City Council;
- (b) Aberdeenshire Council;
- (c) SEPA; and
- (d) Transport Scotland

As appropriate with regards to providing trash screens and security screens at culverts.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

- (ix) Multi-pipe culvert systems shall not be permitted in the Design.

- (x) The Design shall ensure that the invert and sides of all watercourses at the inlets and outlets of culverts over a minimum length of 5 metres shall be protected from scour and erosion.

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Cascades and erosion protection on all watercourses shall be constructed in natural stone matching the colour, finish and features of watercourses within and adjacent to the New works Site, or as otherwise agreed with SEPA.

- (xi) The Design shall ensure that provision shall be made for safe access to each culvert inlet and outlet for inspection and maintenance purposes.

#### 1.5.7 Pollution Control and Flood Prevention

- (i) The Company shall take all reasonable precautions and comply with all Laws, including SEPA requirements, in conjunction with the water environment, including:

- (a) any interference with the supply to or abstraction from water sources;
- (b) silting;
- (c) erosion of watercourse beds or banks; and
- (d) pollution of water so as to affect adversely the quality or appearance thereof or cause injury or death to animal, aquatic or plant life in each case by an act or omission by the Company.

- (ii) The Company shall consult and comply with the requirements of:

- (a) SEPA;
- (b) Aberdeen City Council;
- (c) Aberdeenshire Council; or
- (d) Transport Scotland

as appropriate with respect to the Design including, but not limited to flood prevention.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

- (iii) Notwithstanding any other provisions of this Agreement, all new outfalls incorporating surface water runoff from road pavements shall be provided with a shut down system to facilitate dealing with accidental spillages. A shut down facility shall be provided both before the inlet and after the outlet of the associated new settlement, attenuation or storage ponds.
- (iv) The shut down system shall be by means of a penstock chamber and penstock system operated from the chamber surface level. The penstock actuator shall be of the floor pillar with bevel gearbox type. The penstock shall be secured by a heavy duty padlock. Two sets of spare keys shall be handed to the Contracting Authority for each penstock padlock.
- (v) The Design shall ensure that the runoff from any road, as described in Table 1 of Schedule 19 to the Agreement, does not increase the risk of flooding downstream of the point of discharge.

The Design shall include a detailed flood risk assessment and shall include any recommendations of such assessment.

- (vi) The Design shall ensure that the drainage system shall include sufficient attenuation of road drainage to reduce flows from the new road drainage system during a 1 in 100 year rainfall event (+20 per cent for climate

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- change) to the equivalent greenfield run-off from a one in two year rainfall event in accordance with HD33/06 prior to discharge to the receiving watercourse.
- (vii) All storage ponds, retention basins,, detention basins, swales, overflow trenches and otherwise shall be sized as in accordance with CIRIA Report C697 "The SUDS Manual" in order to allow settlement for pollution removal purposes.
  - (viii) The Design shall ensure that all settlement, attenuation and storage ponds and otherwise shall take into account ground water levels and shall be designed to have permanent water below the outlet level.
  - (ix) The Design shall ensure that all settlement, attenuation and storage ponds and otherwise shall include provision to prevent accidental release of hydrocarbons into the receiving watercourse including a baffle or similar in accordance with DMRB 33/06.
  - (x) The Design shall ensure that all settlement, attenuation and storage ponds and otherwise shall also comply with the requirements of section 6.7.14.
  - (xi) The Company shall consult and comply with Aberdeen International Airport in respect of the Design of settlement, attenuation and storage ponds and otherwise regarding the need for measures to avoid increased risk of airplane bird strike. The Company shall incorporate measures as appropriate within their Design. The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.
  - (xii) The Design shall ensure that access to all settlement, attenuation and storage ponds and otherwise shall be provided for maintenance purposes either on New Access Roads/Tracks constructed specifically for this purpose or through use of New Means of Access or otherwise and shall incorporate suitable turning areas for maintenance vehicles.
  - (xiii) The Design shall ensure that access to all settlement, attenuation and storage ponds and otherwise shall extend to aquatic benches and the inlet and outlet infrastructure, and to the base of the pond via a ramp for maintenance access.
  - (xiv) The Design shall ensure that where New Access Roads/Tracks are being constructed specifically to give access to settlement, attenuation and storage ponds and otherwise, these shall be formed in un-surfaced access construction in accordance with paragraph 1.7.5 (iii).
  - (xv) The Design shall ensure that where it is proposed to make use of either footways/cycle tracks or, New Means of Access and otherwise as described in Table 1 of Schedule 19 of the Agreement for the purpose of access to settlement, attenuation and storage ponds and otherwise, the relevant sections of either footways/cycletracks or Accommodation Works Access Tracks, New Means of Access and otherwise shall be widened to a minimum of 4 metres and constructed to the minimum same standard as the footway/cycletracks or New Means of Access and otherwise.
  - (xvi) The Design shall include measures including but not limited to gates with locks, removable bollards, fences and otherwise to deter use of any maintenance access routes by unauthorised vehicles and non-motorised users.

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- (xvii) On the Balmedie- Tippetry section a amenity pond shall be provided and connected to the existing pond at Dambrae, with an existing pond within the Land Made Available retained and lined, all works as detailed on drawing P246600/SK/DP0501.

## 1.5.8 Watercourse Diversions

- (i) The Company shall consult and comply with the requirements of:

- (a) SNH;
- (b) SEPA;
- (c) Aberdeen City Council; and
- (d) Aberdeenshire Council;

as appropriate and comply with the Water Environment (Controlled Activity)(Scotland) Regulations 2005 with respect to the Design for watercourse diversions.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

- (ii) The Design shall include for the diversion of watercourses as described in the Watercourse Notices included in Schedule 9.
- (iii) Other than those watercourses described in the Watercourse Notices included in Schedule 9, existing watercourses, whether flowing or dry shall continue on their existing alignment.

The Design shall ensure that all watercourses shall be taken under the Project Roads in culverts, or in Structures.

## 1.5.9 Service Ducts

- (i) The Company shall consult and comply with the requirements of Statutory Undertakers and owners of Private Apparatus and other relevant parties with regard to the provision of service ducts for the use of, or the future use of, any Statutory Undertakers and owners of Private Apparatus and other relevant parties, including but not limited to, the following:

- (a) Scottish Water;
- (b) Scottish and Southern Energy Transmission;
- (c) Scottish and Southern Energy Distribution;
- (d) Scotland Gas Networks;
- (e) British Telecommunications;
- (f) Cable and Wireless; and
- (g) Traffic Master.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

- (ii) The Design shall ensure that service ducts have a metal foil strip laid above them to aid their future location and shall be provided with 45 degree bends and extensions at each end to provide entry at a depth of 0.5 metres below finished ground level terminating a minimum of 0.5 metres out-with the edge of the carriageway.

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Empty ducts shall include draw wires or cords and plugs.

- (iii) Service ducts for future provision shall terminate in a draw chamber.
- (iv) A set of spare twin transverse 100 millimetre internal diameter smooth bore rigid style ducts shall be provided across all slip roads at the back of nosings.
- (v) The Design shall include spare transverse ducts beneath each road connecting to each junction within 10 meters of the approach to the junction, as follows:
  - (a) 2 x 100 millimetres diameter telecom ducts; and
  - (b) 2 x 150 millimetres diameter power supply ducts.

#### 1.5.10 Pumping Stations

- (i) Pumping station design shall take account of BD78/99 – Chapter 7 (DMRB, Volume 2, Section 2, Part 9) and CIRIA Report 121, 'Design of low-lift pumping stations'.
- (ii) Pumping stations shall prevent flooding from the surface water drainage network and shall cater for all events up to and including the 1 in 30yr plus climate change.
- (iii) The design flow rate shall be between 80% and 105% of the pumpset 'best efficiency point' (BEP). The minimum standby capacity shall be equivalent to one third of the design flow rate.
- (iv) Maintenance access shall include a 'permanently-in-place' pump removal facility. All lifting equipment shall comply with the Lifting Operations and Lifting Equipment Regulations and Provision and Use of Work Equipment Regulations.
- (v) An auxiliary or stand-by power supply (capable of full operation of the pumping station) shall be provided together with an advance warning system capable of alerting the Company to the particular fault.

#### 1.5.11 Flood Protection

- (i) The Company shall consult and comply with the requirements of SEPA in respect of the Design of any flood protection and compensatory storage measures. The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.
- (ii) The Design shall include a detailed flood risk assessment and shall comply with any recommendations of such assessment.
- (iii) Flood protection and compensatory storage shall be provided where the Works encroach on the functional floodplain of main rivers where the functional floodplain is as defined in Scottish Planning Policy (SPP).
- (iv) Flood defences shall include appropriate freeboard including allowance for climate change, modelling inaccuracies, settlement, and erosion.
- (v) Maintenance access shall be provided to flood defences and compensatory storage areas.

## 1.6 Earthworks

### 1.6.1 General



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- (i) The geotechnical design for earthworks shall comply with:
  - (a) the principles and application rules of BS EN 1997-1 and the accompanying UK National Annex, as modified and supplemented by these New Works Requirements;
  - (b) the requirements of the DMRB, where they do not conflict with the above; and
  - (c) relevant non-contradictory complementary information.
- (ii) The Company shall carry out a risk assessment as part of the earthworks design in order to minimise any risk to the general public, pedestrians, cyclists and any other road users resulting from the Design, construction and completion of the New Works.
- (iii) The Company shall take all necessary measures to prevent rock or other debris from falling onto the carriageway.
- (iv) The Company shall take all necessary measures to obviate any adverse effects on the surrounding area and to prevent flooding and/or pollution.
- (v) The Company shall develop an earthworks strategy to demonstrate the effective management of the earthworks balance.
- (vi) Any ground improvement methods and systems that shall be provided by the Company in the Design, execution and completion of the New Works shall be provided in accordance with the manufacturer's written guidance where appropriate. The Company shall undertake in situ trials and testing of the ground improvement techniques to demonstrate that the desired performance can be achieved. The type, extent and frequency of in situ testing shall be specified by the Designer. The in situ trials shall be undertaken in advance of the New Works.
- (vii) The Company shall remove, and where possible recycle into the New Works, all redundant areas of existing road pavement from within the New Works Site.
- (viii) All earthworks shall be subject to landform design of the New Works as specified in Section 6 of these New Works Requirements except that any design necessary to ensure short-term and long-term stability shall take precedence.
- (ix) In areas where topsoil depths greater than 150 millimetres are proposed, the Company shall carry out stability assessments and take all necessary measures to ensure topsoil stability.
- (x) The Company shall design earthworks slopes including strengthened earthworks to avoid the need for hard facings.
- (xi) Gabions and crib walling shall not be permitted in any part of the design of the New Works. The Company shall consult and comply with Transport Scotland or the relevant roads authority regarding proposals for necessary works to existing gabions or crib walling.
- (xii) Subject to the requirements of clause 1.5.3(xii) the Company shall provide cut-off drainage lined as required in order to prevent water from undermining cuttings and embankments but also in any case as required by other New Works Requirements, Environmental Commitments, or as specified by the Designer.

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- (xiii) The Company shall keep excavations for earthworks and structures free from groundwater and surface water and undertake every reasonable means to ensure that formation is protected from inclement weather. The Company shall remove and replace all materials damaged by water or trafficking at formation level with well compacted suitable granular fill prior to upfilling or before foundation construction.
- (xiv) Certificates shall be provided by the Company to confirm that any geosynthetics / geotextiles used in the New Works shall have a minimum operational life span of 120 years.
- (xv) Excavated materials shall be assessed by the Company for suitability for re-use as acceptable material as defined in the MCHW, Specification for Highway Works, Volume 1, Clause 601. The use of lime or cement treatments may be considered where possible to render excavated materials suitable for reuse in the New Works.
- (xvi) The use of Spent Oil Shale as backfill to structures is not permissible.
- (xvii) The Company shall undertake static load tests or similar at the locations of the proposed BP and Shell pipeline protection structures and proposed railway structures to demonstrate the suitability of the ground to support the proposed structures.
- (xviii) Prior to commencement of any earthworks in the vicinity of any BP or Shell pipeline, the Company shall consult and comply with the requirements of BP or Shell. The Company shall provide Consultation Certificates in respect of this requirement.
- (xix) Prior to commencement of any earthworks in the vicinity of any railway, the Company shall consult and comply with the requirements of Network Rail and / or any other relevant railway undertaker. The Company shall provide Consultation Certificates in accordance with this requirement.

#### 1.6.2 Ground Investigation Report

- (i) The Company shall prepare a Ground Investigation Report ("GIR") as defined in the DMRB for the scheme in accordance with BS EN 1997-2, which may be subdivided and arranged as appropriate. The first GIRs shall be submitted with accompanying documentation within three months of the Commencement Date. Further revised GIRs, updated to take account of any supplementary ground investigations or other relevant additional information, shall be issued at appropriate intervals as the execution of the New Works proceeds. The final GIRs shall be submitted prior to submittal of the relevant Final Construction Certificate(s). The GIRs shall be submitted in accordance with the Certification Procedure.

#### 1.6.3 Geotechnical Design Report

- (i) The Company shall prepare a Geotechnical Design Report as defined in the DMRB for all earthworks, foundations, retaining walls or other geotechnical design elements of the scheme in accordance with BS EN 1997-1, which may be subdivided and arranged as appropriate. The report(s) shall be updated to take account of any supplementary ground investigations or other relevant additional information as the New Works proceed.

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- (ii) The following additions to clause 2.8(3) of BS EN 1997-1:2004 after the third sub clause “a description of the proposed construction, including actions” shall be added:
    - (a) characteristic values of pile resistances, including justification, as appropriate
    - (b) design values of pile resistances, including justification, as appropriate; and
    - (c) characteristic values of soil and rock properties, including justification, as appropriate
  - (iii) The clause 2.8(3) of BS EN 1997-1:2004 shall be considered to be a principle in the context of the Eurocodes, i.e. 2.8(3) P.
  - (iv) The relevant part(s) of the Geotechnical Design Report(s) shall be submitted to accompany each Structures Design Statement and each Structures Design Certificate. The final report(s) shall be submitted prior to submittal of the relevant Construction Certificate(s).
  - (v) The Geotechnical Design Report(s) shall be submitted in accordance with the Certification Procedure.
  - (vi) The Geotechnical Design Report(s) shall be submitted 28 days in advance of construction of the New Works element.

#### 1.6.4 Geotechnical Feedback Report

Within three months of the completion of construction, the Company shall submit a Geotechnical Feedback Report as defined in the DMRB in the format given in Appendix F of HD22 of the DMRB. The contents of the report shall include, but not be limited to, the following:

- (i) geotechnical records for foundations;
- (ii) geological records;
- (iii) ground investigation and inspection records obtained during the construction phase and summary of any divergences from the assumed ground conditions as presented in Structures Design Statements and Geotechnical Design Report(s);
- (iv) groundwater level monitoring and quality records;
- (v) ground movement monitoring records;
- (vi) piling and embedded retaining wall construction records;
- (vii) as-built location and geometry of all completed works including any temporary works left in-situ with permission of the Contracting Authority;
- (viii) construction records for all Structures, Earthworks and ground improvement techniques;
- (ix) all material compliance test results;
- (x) all integrity test results;
- (xi) all strength measurement test results on materials (concrete cylinder / cube, etc.) for Permanent Works and Temporary Works left in-situ with permission of the Contracting Authority; and
- (xii) all non-conformance reports and completed close out documentation.

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## 1.6.5 Swallow Holes and Other Naturally Occurring Cavities

- (i) The Company shall carry out an assessment of ground instability in relation to the design of the New Works. Any requirements for mitigation in the design of the New Works (including remedial works such as grouting) shall be identified in the relevant Structures Design Statement and Geotechnical Design Report. A report on the ground instability assessment, together with any design recommendations and / or proposals for remedial works shall be submitted to the Contracting Authority prior to construction of the relevant part of the New Works.
- (ii) Where the design or construction of the New Works requires works which intersect, disturb or enter any swallow hole or naturally occurring cavity, the Company shall consult and comply with requirements of:
- (a) Aberdeen City Council;
  - (b) Aberdeenshire Council; and
  - (c) SEPA;
- as appropriate, within their respective boundaries.
- The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.
- (iii) The design, construction and completion of any grouting works and measures to stabilise any swallow hole or naturally occurring cavity shall comply with the following:
- (a) the DMRB; and
  - (b) Appendix 6/11 to the Specification;
- (iv) The Company shall consult and comply with the requirements of SEPA with regard to the design, execution and completion of grouting works, which are regulated under the Water Environment (Controlled Activities) (Scotland) Regulations 2005. The use of PFA for grouting, where applicable, shall be in accordance with Section 4. The design for grouting works shall minimise the mobilisation of contaminated groundwater as far as reasonably practicable. Any contaminated groundwater brought to the surface by such operations shall be subject to appropriate treatment and disposal.
- The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.
- (v) Grouting works to treat any swallow hole or naturally occurring cavity shall be designed to ensure complete containment within the Land Made Available by the Scottish Ministers for the New Works and that no land or properties outside the Land Made Available are affected by the New Works.
- (vi) The Design, construction and completion of any grouting works shall include control measures such as barriers, lined cut-off ditches and settlement ponds at each grout location. The control measures shall intercept run-off, contain grout spillage and ensure that any impact of grouting of any swallow hole or naturally occurring cavity on the quality of local watercourses, drains and shallow groundwater shall be prevented. Sediment that shall be collected in ditches or ponds shall be removed and

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transported off-site at sufficient intervals to prevent over-filling of run-off containment measures.

- (vii) In areas being treated by grouting boreholes at 25 metre intervals along and across the area to be grouted, shall be designated groundwater monitoring holes.

During grouting operations, water levels shall be recorded regularly throughout the day as a control, at not less than three occasions spread evenly throughout the day.

Results shall be made available to the Contracting Authority daily.

On completion of the grouting operations in the area these holes shall be backfilled with grout.

#### 1.6.6 Soil Cuttings

- (i) The tops and bottoms of all cuttings in soil shall be rounded to a minimum radius of two metres over a length of one metre or, where space does not permit, to the maximum radius possible, proposals for which shall be submitted to the Contracting Authority for agreement.
- (ii) Permanent drainage channels shall be constructed at the crest of all cuttings, subject to the provisions of Section 1.5 with the exception of areas where the existing ground profile ensures that water, which would otherwise be intercepted by a drainage channel, is directed away from the crest of the cutting and the slope forming materials. All drainage channels constructed at the crest shall be designed and constructed so as not to allow surface water into the slope forming materials thereby reducing the stability of the cut slope. All crest channels shall be lined. Paving slabs shall not be permitted as a lining for erosion control.
- (iii) The Company shall demonstrate consideration of adequate slope drainage in their design in the Geotechnical Design Report referred to above.
- (iv) Slope drainage shall not be used to ensure long term stability of soil cut slopes. Slope drainage shall be used as an additional measure to improve long term stability. Long term stability shall be ensured by other design considerations. It shall be noted that very shallow and artesian groundwater conditions may be encountered in areas of the New Works Site.
- (v) Where soil cuttings require a mid-slope berm for stability and drainage control purposes, the berm shall be a minimum of three metres wide and be accessible for maintenance.
- (vi) Where environmental bunds are constructed on the top of cutting slopes, the toe of the environmental bund shall be offset from the crest of the slope by a minimum of three metres.
- (vii) All cuttings shall be constructed within the Land Made Available by the Scottish Ministers for the New Works. Where space does not permit a slope angle with adequate stability, alternative stabilisation measures shall be considered.
- (viii) Where soil nails are proposed, they shall be designed using DMRB HA68/94 Volume 4 Section 1 and CIRIA C637: Soil Nailing – Best Practice Guidance (design approach 1-2). Soil nail head design shall take account of Geoguide 7 (GEO Civil Engineering and Development Department,

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Hong Kong Government) for recessed soil nail head details. The following requirements apply to soil nail design and execution:

- (a) the presence of deep-seated failure surfaces in the control of overall soil nail length shall be considered;
- (b) in determining critical design surfaces and bond lengths, unfactored parameters with a minimum existing factor of safety = 1.0 shall be used;
- (c) the soil nail head assembly head size requirements shall be determined using DMRB HA68/94; Volume 4, Section one Appendix E/3(a). Concrete head pads shall be used in line with Figure A3.3 of CIRIA C637 with recessed soil nail heads as shown in Figure 5.11 of Geoguide 7. All soil nailed slopes shall be finished so that they are capable of supporting vegetation. Erosion control netting shall be used connected to the soil nail heads on the surface to prevent erosion between the soil nail heads prior to vegetation establishment;
- (d) flexible facings (without a properly designed and dimensioned soil nail head) shall not be allowed; and
- (e) durability of soil nail bars and soil corrosivity shall be assessed in line with guidance included within CIRIA C637.

#### 1.6.7 Rock Cuttings

- (i) Rock cuttings shall be designed and constructed to provide safe and sustainable rock slopes, minimising instability and the requirement for future maintenance and minimising environmental impact.
- (ii) Design and construction of rock cuttings shall be in accordance with Hoek and Bray, Rock Slope Engineering as well as details and advice given in Rock Engineering Guides to Good Practice: Road Rock Slope Excavation (TRL Report 2011).
- (iii) The design and construction of rock excavation works shall minimise the requirement for the provision of any permanent means of rock control or containment, such as rockfall netting, rock catch fences and barriers either on the rock face or verge, and the use of strengthening or support (rock dowels or bolts), concrete buttresses, shotcrete and the like. However, ongoing stability and protection of the public shall take precedence for temporary control and permanent long term performance. The design and construction of the New Works shall include all rock slope stabilisation measures required to ensure that the rock slope is stable and remains stable for its full design life, taking into account weathering and degradation.
- (iv) Any excavation techniques adopted shall not compromise the stability of the rock slopes, or lead to increased risk to the road infrastructure or to the general public for the design life of the road. Excavation techniques (including blasting where permitted - see Section 1.6.11) shall allow for the formation of the appropriately designed drainage ditches and rock trap ditches. Where controlled blasting techniques are used, the blasting design shall prevent bulk blasting damage to the final face of the rock slope, in particular but not limited to at the toe of the finished rock slope.

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- (v) The design shall include rockhead berms formed at the contact between sound rock and overlying materials. This is defined as the boundary between material that can be directly excavated using standard machines (such as back-actors) and material that needs to be broken before excavation (for instance, by way of ripping or blasting).
- (vi) The design of rockhead berms shall provide access for inspection and maintenance and shall take into account all geological factors which could lead to instability in the rock at the edge of the berm and / or in the overlying material. Rockhead berms shall be formed to provide a smooth uniformly trimmed surface with a transverse profile (cross fall) which shall dip towards the upper batter. All rockhead berms shall have a minimum effective width of 3.0 metres, after excavation. The effective width shall not include any rounding at the berm edge or irregularity/over excavation in the formation of the lower batter. Rockhead berms shall include for berm drainage channels to collect and control any seepage from the cut face.
- (vii) The design shall include intermediate berms to provide access for maintenance and to break up the appearance of extensive rock slopes exceeding of the order of 10 metres in height.
- All intermediate berms shall have a minimum effective bench width of 3.0 metres. The intermediate berms shall have a transverse profile (cross fall) which shall dip towards the upper rock slope, and shall incorporate drainage measures to discharge the surface water runoff from the cutting slope above the bench and an appropriately sized rock trap designed to accommodate rockfall material from the upper slope(s).
- (viii) In slope raking drains in the excavated rock slope face shall be used in areas of seepage or high groundwater as required.
- (ix) The Company shall have an engineering geologist on site to record rock faces exposed during execution and to assess the requirement for any rock stabilisation measures to address specific conditions encountered that differ to those assumed at the design stage. Full details of these elements of the works shall be included within the Geotechnical Feedback Report described in Section 1.6.4.
- (x) Structures may be founded within rockhead berms providing the stability of the cutting above or below the rockhead berm is not compromised; berm drainage requirements are incorporated; and the requirements for maintenance and inspection as detailed in Clause 2.13 of Volume 5, Schedule 2, Part 2 are met.
- (xi) The requirement for rockhead berms does not prohibit structures being founded within the rockhead berm providing the stability of the cutting above or below the rockhead berm is not compromised; berm drainage requirements are incorporated; and the requirements for maintenance and inspection as detailed in Clause 2.13 of Volume 5, Schedule 2, Part 2 are met.

#### 1.6.8 Existing Natural and Constructed Slopes (including Rock Cuttings)

- (i) The Company shall ensure that the stability of any existing natural or constructed slope (including rock cutting) impacted by or impacting on the New Works shall not:

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- (a) adversely affect the long-term stability or safety of the New Works; and / or
    - (b) be adversely affected by the design, execution and completion of the New Works.
  - (ii) The design, construction and completion of the New Works shall be undertaken to ensure that the existing slopes are at least as stable in the long term as the current conditions at any given location.
  - (iii) Where the design of the New Works incorporates, impinges upon, modifies or extends any such slope, or part of any such slope, the requirements for that slope shall be as for new slopes or cuttings.
- 1.6.9 Temporary Works Adjacent to Sections of Live Carriageway
- (i) The Company shall ensure the stability of sections of live carriageway, footpath, railway line, pipeline, structures, buildings and the like adjacent to any temporary works slopes. The Company shall demonstrate stability of live sections of carriageway, footpath, railway line, pipeline, structures, buildings and the like for the duration of any adjacent temporary works slopes by means of appropriate surface movement monitoring.
- 1.6.10 Embankments
- (i) The tops and bottoms of all embankments in soil shall be rounded to a minimum radius of two metres over a length of one metre or, where space does not permit, to the maximum radius possible, proposals for which shall be submitted to the Contracting Authority for agreement.
  - (ii) Where an embankment is constructed on any existing slope steeper than 1in5, the existing surface shall be benched. The maximum height of the bench shall be 500 millimetres.
  - (iii) Topsoil and pockets of soft-soil and loose rock shall be removed from beneath embankments, except where alternative measures in accordance with the New Works Requirements and Specification are proposed in the Design of the New Works.
  - (iv) The Company shall take measures to ensure that the settlement of embankments shall be substantially complete before the road pavement shall be constructed.
  - (v) All embankments greater than 5m in height constructed from Class 2 material constructed on cohesive foundations shall incorporate a granular starter layer of 1000mm thickness, except where the Company demonstrates that alternative embankment foundation proposals have no adverse impact upon the short and long term stability of the embankment.
- 1.6.11 Blasting
- (i) Blasting shall only be permitted with the prior written approval of the Contracting Authority, which shall not be unreasonably withheld.
  - (ii) Blasting shall not be permitted in the excavations for foundations of structures without the prior approval of the Contracting Authority.
  - (iii) All blasting activities shall meet the requirements of the Environmental Statement and Appendix 1/9 to the Specification.
  - (iv) The Company shall consult and comply with:



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- (a) Aberdeen City Council;
- (b) Aberdeenshire Council;
- (c) the Scottish Ministers Trunk Road North East Management Unit;
- (d) SNH;
- (e) Network Rail;
- (f) BP; and
- (g) Shell.

as appropriate, before being permitted approval for blasting within or adjacent to their respective boundaries. The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

- (v) A detailed blasting assessment report shall be submitted to the Contracting Authority a minimum of 21 days prior to any blasting taking place for all features within influencing distance of the production blasts, including precondition surveys of, as appropriate:
  - (a) adjacent buildings and retaining walls;
  - (b) railways;
  - (c) highways structures;
  - (d) utilities and services;
  - (e) water tunnels and the like;
  - (f) embankments; and
  - (g) slopes, including rock, soil and fill.
- (vi) The contents of the blasting assessment report shall include, as a minimum, geology, mining, hydrology, relevant ground investigation details, layout of proposed blasting zones, overview of sensitive receivers and calculations shall be provided to show limiting vibrations (peak particle velocity and peak particle acceleration) air-overpressures and anticipated maximum charge–weights per delay allowed for all of the above listed sensitive receivers. The influencing distance of the blast shall be determined as part of the report.
- (vii) The Company shall carry out trial blasts utilising their proposed blasting plan, to demonstrate the Company's ability to satisfy the requirements for both blasting vibration and rock cutting stability at the location of each rock cutting, and to determine relevant blasting constants and parameters for production blast design, prior to production blasts. The blasting trials shall follow the recommendations of Research Report 53 "Ground Vibration caused by Civil Engineering Works", published by the UK Transport Research Laboratory in 1986, ISBN 0266-5247. Method statements shall be produced by the Company detailing, but not limited to, trials to be carried out together with monitoring, testing and records to be made and requirements for inspection and logging of formations and cut faces on completion of excavation.
- (viii) A minimum of three vibrographs shall be used to record ground vibration and air overpressure, with a minimum of one vibrograph at each location of either infrastructure or property that could be affected by the blasting.

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- (ix) The Company shall use the results to ensure that production blasts do not exceed the required vibration and air overpressure limits. Method statements shall be produced detailing, but not limited to, proposals for the control of flyrock and overbreak, controlled blasting requirements and permitted stage heights.
- (x) The blast designs and execution of the blasting works shall be undertaken using references and regulations including, but not limited to, The Quarries Regulation (1999); BS5607, 1998 Code of Practice for the Safe Use of Explosives;- Environmental Protection Act 1990; BS6472:1992; BS 7385-1:1990, BS 7385-2:1993 Scottish Executive Department Planning Advice Note 50 (PAN 50) Annex D, Part 3LR1094 (Pre-split Blasting for Highway Rock Excavation, 1983) and SR 817 (Device for measuring Drill rod and Drill Hole Orientation, 1984), published by the UK Transport Research Laboratory. The use of pre-split blasting for control, damage to the rock mass as well as stability shall be considered, with due cognisance of the final appearance of the rock slope face.
- (xi) A post-blasting operations condition survey shall be undertaken of all features covered in the blasting assessment report and the results provided to the Contracting Authority in accordance with the Certification Procedure.
- (xii) The Company shall liaise with land and property owners and occupiers, as appropriate, adjacent to the New Works and take all necessary measures to minimise disturbance or intrusion to the general public and to prevent surprise or alarm being caused to the public and livestock during the execution of the New Works.

Prior to any rock blasting, the Company shall be responsible for notifying the public of any proposed blasting activities in accordance with the following:

- (a) The Company shall advise the public of all proposed blasting activities forming part of the Works, and shall safeguard the public against such activities.
- (b) The Company shall issue written notification to all households, businesses, public buildings and any other occupied premises within 500 metres of the blast site of any imminent blasting activities no later than 14 days in advance of the commencement of the activities. Additionally, the Company shall publicise the work with an advisory notice which shall be published in the local press and shall be posted at public buildings and offices and other locations as required by the Contracting Authority no later than 14 days in advance of the activities.
- (c) Where possible blasting shall be carried out at the same time or times on each date.
- (d) Written notification and public notices shall include the following information as a minimum:
- Location of the proposed blasting activities;
  - Precise dates and times of blasts;

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- The name and address and telephone number of a contact within the Company's organisation who shall deal with queries from members of the public;
  - The period over which the blasting shall be undertaken; and
  - Details of audible and visual warnings to be provided prior to all individual blasts.
- (xiii) The Company shall remedy any defects in the New Works or damage to adjacent properties or features caused by the blasting operations, as determined by the Contracting Authority.

**1.6.12 Rock Excavation by Chemical Means**

- (i) The use of chemical non-explosive rock splitting agents or rapid expansion techniques shall be permitted to break out massive and competent rock horizons, combined with mechanical excavation as required, subject to the implementation of an adequate risk management system.

**1.6.13 Topsoil**

- (i) The Company shall ensure that topsoil handling and storage shall be undertaken in accordance with the Specification and the following:
- (a) Where the Company identifies topsoil from a particular source that shall be intended to be re-spread in a specified location within the New Works, the Company shall stockpile the topsoil separately and mark the storage location on a plan.
  - (b) Stockpiled vegetation and upper soil horizons shall be stored separately from lower soil horizons.
  - (c) Soil stockpiles shall not be placed over the rooting zone of mature trees, in areas where existing trees / habitats may be damaged or where surface run-off may cause pollution.
  - (d) Soil stockpiles shall be located away from any watercourses.
- (ii) Topsoil depths in the New Works shall be as follows:
- (a) where sowing grass seed the depth shall be a minimum of 100 millimetres;
  - (b) in areas to be planted with trees and shrubs, with the exception of rock cuts, the depth shall be a minimum of 300 millimetres; and,
  - (c) in areas of land potentially to be returned to agriculture, topsoil depth shall be a minimum of 400 millimetres.
- (iii) In areas to be seeded with a combined mix of grass and wildflowers existing topsoil shall be removed prior to seeding. No topsoil shall be spread in areas to be seeded with a combined mix of grass and wildflowers except in areas of proprietary soil retention matting.

**1.7 Road Pavement****1.7.1 General**

- (i) The road pavement Design for roads as described in Table 1 of Schedule 19 of the Agreement, other than New Access Roads/Tracks, shall be in

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accordance with the requirements of the DMRB and the Highways Agency Interim Advice Note 73/06 (Draft HD 25).

- (ii) The Design shall include the assessment of traffic for the purpose of pavement Design for all roads listed in Table 1A.
- (iii) The road pavement design for all roads listed in Table 1B shall be based on the Design Traffic (msa) figures provided in Table 1B, which are msa figures for a 40 year design life.

**Table 1A Trunk Roads which shall become the maintenance responsibility of the Company**

| Road name                                                  | Road located between Reference Points |
|------------------------------------------------------------|---------------------------------------|
| A90 AWPR Northbound (Stonehaven to Cleanhill)              | A01 to A02                            |
| A90 AWPR Southbound (Cleanhill to Stonehaven)              | A02 to A01                            |
| A90 AWPR Northbound (Cleanhill to Milltimber)              | A03 to A05                            |
| A90 AWPR Southbound (Milltimber to Cleanhill)              | A04 to A03                            |
| A90 AWPR Northbound (through Milltimber Junction)          | A05 to A07                            |
| A90 AWPR Southbound (through Milltimber Junction)          | A06 to A04                            |
| A90 AWPR Northbound (Milltimber to South Kingswells)       | A07 to A08                            |
| A90 AWPR Southbound (South Kingswells to Milltimber)       | A09 to A06                            |
| A90 AWPR Northbound (through South Kingswells Junction)    | A08 to A11                            |
| A90 AWPR Southbound (through South Kingswells Junction)    | A10 to A09                            |
| A90 AWPR Northbound (South Kingswells to North Kingswells) | A11 to A12                            |
| A90 AWPR Southbound (North Kingswells to South Kingswells) | A13 to A10                            |
| A90 AWPR Northbound (North Kingswells to Craibstone)       | A12 to A15                            |
| A90 AWPR Southbound (Craibstone to North Kingswells)       | A14 to A13                            |
| A90 AWPR Northbound (through Craibstone Junction)          | A15 to A17                            |
| A90 AWPR Southbound (through Craibstone Junction)          | A16 to A14                            |
| A90 AWPR Northbound (through Craibstone Junction)          | A17 to A18                            |
| A90 AWPR Southbound (through Craibstone Junction)          | A19 to A16                            |
| A90 AWPR Northbound (Craibstone to Goval)                  | A18 to A20                            |
| A90 AWPR Southbound (Goval to Craibstone)                  | A21 to A19                            |
| A90 AWPR Northbound (through Goval Junction)               | A20 to A22                            |
| A90 AWPR Southbound (through Goval Junction)               | A23 to A21                            |
| A90 AWPR Northbound (Goval to Blackdog)                    | A22 to A24                            |
| A90 AWPR Southbound (Blackdog to Goval)                    | A24 to A23                            |

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| <b>Road name</b>                                                        | <b>Road located between Reference Points</b> |
|-------------------------------------------------------------------------|----------------------------------------------|
| A956 AWPR Eastbound (Cleanhill to Charleston)                           | A25 to A26                                   |
| A956 AWPR Westbound (Cleanhill to Charleston)                           | A26 to A25                                   |
| Milltimber Junction Northbound Diverge Slip Road                        | A27 to A28                                   |
| Milltimber Junction Southbound Merge Slip Road                          | A29 to A30                                   |
| Milltimber Junction Northbound Merge Slip Road                          | A31 to A32                                   |
| Milltimber Junction Southbound Diverge Slip Road                        | A33 to A34                                   |
| South Kingswells Junction Northbound Diverge Slip Road                  | A35 to A36                                   |
| South Kingswells Junction Southbound Merge Slip Road                    | A37 to A38                                   |
| South Kingswells Junction Northbound Merge Slip Road                    | A39 to A40                                   |
| South Kingswells Junction Southbound Diverge Slip Road                  | A41 to A42                                   |
| North Kingswells Junction Northbound Merge Slip Road                    | A43 to A44                                   |
| North Kingswells Junction Southbound Diverge Slip Road                  | A45 to A46                                   |
| Craibstone Junction Northbound Diverge Slip Road (Ghost Island Diverge) | A47 to A48                                   |
| Craibstone Junction Southbound Merge Slip Road (Ghost Island Merge)     | A49 to A50                                   |
| Craibstone Junction Northbound Diverge Slip Road                        | A48 to A51                                   |
| Craibstone Junction Southbound Merge Slip Road                          | A52 to A49                                   |
| Craibstone Junction Northbound Merge Slip Road                          | A53 to A54                                   |
| Craibstone Junction Southbound Diverge Slip Road                        | A55 to A56                                   |
| Goval Junction Northbound Diverge Slip Road                             | A57 to A58                                   |
| Goval Junction Southbound Merge Slip Road                               | A59 to A60                                   |
| Goval Junction Northbound Merge Slip Road                               | A61 to A62                                   |
| Goval Junction Southbound Diverge Slip Road                             | A63 to A64                                   |
| Cleanhill Roundabout                                                    | A02 to A02                                   |
| B979 Netherley Road (1) Northbound                                      | B01 to B02                                   |
| B979 Netherley Road (1) Southbound                                      | B02 to B01                                   |
| A956 Charleston Junction Eastbound                                      | B03 to B04                                   |
| A956 Charleston Junction Westbound                                      | B04 to B03                                   |
| A96 Craibstone Junction Link Road Southbound                            | B07 to B08                                   |
| A96 Craibstone Junction Link Road Northbound                            | B08 to B07                                   |
| Existing A90 Northbound (Schoolhill to Charleston)                      | B27 to B29                                   |
| Existing A90 Southbound (Charleston to Schoolhill)                      | B30 to B28                                   |

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| Road name                                                               | Road located between Reference Points |
|-------------------------------------------------------------------------|---------------------------------------|
| Existing A90 Northbound (through Charleston Junction)                   | B29 to B32                            |
| Existing A90 Southbound (through Charleston Junction)                   | B32 to B30                            |
| Existing A90 Northbound (Blackdog to Balmedie)                          | B33 to B36                            |
| Existing A90 Southbound (Balmedie to Blackdog)                          | B35 to B34                            |
| Blackdog Junction Northbound Merge Slip Road                            | B17 to B18                            |
| Blackdog Junction Southbound Diverge Slip Road                          | B19 to B20                            |
| Charleston Junction Northbound Diverge Slip Road (Ghost island diverge) | B21 to B22                            |
| Charleston Junction Southbound Merge Slip Road (Ghost Island merge)     | B23 to B24                            |
| Charleston Junction Northbound Diverge Slip Road                        | B22 to B25                            |
| Charleston Junction Southbound Merge Slip Road                          | B26 to B23                            |
| Stonehaven Roundabout                                                   | B02 to B02                            |
| Craibstone Roundabout                                                   | B06 to B06                            |
| Blackdog Roundabout                                                     | B17 to B17                            |
| A90 Northbound (through Balmedie Junction)                              | B36 to B38                            |
| A90 Southbound (through Balmedie Junction)                              | B37 to B35                            |
| A90 Northbound ( Balmedie Junction to Newburgh)                         | B38 to B40                            |
| A90 Southbound (Newburgh to Balmedie Junction)                          | B39 to B37                            |
| A90 Northbound (Newburgh to Tippetty)                                   | B40 to B41                            |
| A90 Southbound (Tippetty toNewburgh)                                    | B42 to B39                            |
| A90 Northbound (Tippetty Junction to Bridgend)                          | B41 to B60                            |
| A90 Southbound (Bridgend toTippetty Junction)                           | B60 to B42                            |
| Balmedie Junction Northbound Merge                                      | B45 to B46                            |
| Balmedie Junction Northbound Diverge                                    | B43 to B44                            |
| Balmedie Junction Southbound Merge                                      | B57 to B58                            |
| Balmedie Junction Southbound Diverge                                    | B55 to B56                            |
| Newburgh Road Junction Northbound Diverge                               | B47 to B48                            |
| Newburgh Road Junction Southbound Merge                                 | B53 to B54                            |
| Tippetty Junction Northbound Merge                                      | B49 to B50                            |
| Tippetty Junction Southbound Diverge                                    | B51 to B52                            |

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**Table 1B** Roads which shall become the maintenance responsibility of Third Parties

| Road name                                        | Road located between Reference Points | Design Traffic (msa) | Commercial Vehicles at Year of opening (2012) |
|--------------------------------------------------|---------------------------------------|----------------------|-----------------------------------------------|
| A96 Aberdeen to Inverness Road (1) Eastbound     | B05 to B06                            | 54.7                 | 849                                           |
| A96 Aberdeen to Inverness Road (1) Westbound     | B06 to B05                            | 60.7                 | 944                                           |
| Stonehaven Junction Northbound Diverge Slip Road | B09 to B10                            | 47.4                 | 701                                           |
| Stonehaven Junction Southbound Merge Slip Road   | B11 to B12                            | 49                   | 725                                           |
| Stonehaven Junction Northbound Merge Slip Road   | B13 to B14                            | 6.1                  | 90                                            |
| Stonehaven Junction Southbound Diverge Slip Road | B15 to B16                            | 5.1                  | 75                                            |
| Balmedie Junction West Roundabout                | C190 to C190                          | 20                   | 211                                           |
| Balmedie Junction East Roundabout                | C241 to C241                          | 24                   | 244                                           |
| Tipperty Junction West Roundabout                | C242 to C242                          | 8                    | 78                                            |
| B979 Netherley Road (1)                          | C01 to C02                            | 7.3                  | N/A                                           |
| B979 Netherley Road (2)                          | C03 to C04                            | 4                    | N/A                                           |
| U89K Auquorthies to Ury Road (1)                 | C05 to C06                            | 4                    | N/A                                           |
| U89K Auquorthies to Ury Road Turning Head        | C07 to C08                            | 4                    | N/A                                           |
| U89K Auquorthies to Ury Road (2)                 | C09 to C10                            | 4                    | N/A                                           |
| U88K to U89K Link Road                           | C11 to C12                            | 4                    | N/A                                           |
| U88K Fishermyme to Clayfolds Road                | C13 to C14                            | 4                    | N/A                                           |
| New U167K Cantlayhills to Wellhead Road          | C15 to C16                            | 4                    | N/A                                           |
| C12K Bridge of Muchalls to Netherley Road        | C17 to C18                            | 4                    | N/A                                           |
| New C25K Muchalls to Burnhead Road (1)           | C19 to C20                            | 4                    | N/A                                           |

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| Road name                                               | Road located between Reference Points | Design Traffic (msa) | Commercial Vehicles at Year of opening (2012) |
|---------------------------------------------------------|---------------------------------------|----------------------|-----------------------------------------------|
| New C25K Muchalls to Burnhead Road (2)                  | C21 to C22                            | 4                    | N/A                                           |
| C24K Skateraw to Cookney Road                           | C21 to C23                            | 4                    | N/A                                           |
| West Stoneyhill Access Road                             | C24 to C25                            | 2                    | N/A                                           |
| New C13K Lairhillock to Portlethen Road                 | C26 to C27                            | 4                    | N/A                                           |
| C5K Lochton to Auchlunies to Nigg Road                  | C28 to C29                            | 4                    | N/A                                           |
| C5K to Blaikiewell Farm Link Road                       | C30 to C31                            | 2                    | N/A                                           |
| C5K to Blaikiewell Farm Link Road                       | C32 to C33                            | 2                    | N/A                                           |
| Milltimber Brae Overbridge                              | C34 to C35                            | 2                    | N/A                                           |
| New A93 North Deeside Road                              | C36 to C37                            | 16.8                 | 249                                           |
| B979 Milltimber Brae Road (1)                           | C38 to C39                            | 10.3                 | 152                                           |
| B979 Milltimber Brae Road (2)                           | C40 to C41                            | 19.5                 | 289                                           |
| New Culter House Road                                   | C42 to C43                            | 2                    | N/A                                           |
| Culter House Road Turning Head                          | C44 to C45                            | 4                    | N/A                                           |
| Contlaw Road                                            | C46 to C47                            | 4                    | N/A                                           |
| New C127C Wester Ord to Blacktop Road                   | C48 to C49                            | 4                    | N/A                                           |
| Kingsford to Gairnlea Road                              | C50 to C51                            | 2                    | N/A                                           |
| Kingsford to Gairnlea Road                              | C52 to C53                            | 2                    | N/A                                           |
| A944 Aberdeen to Alford to Strathdon Road (1) Eastbound | C54 to C55                            | 41.9                 | 619                                           |
| A944 Aberdeen to Alford to Strathdon Road (1) Westbound | C55 to C54                            | 47.8                 | 708                                           |
| A944 Aberdeen to Alford to Strathdon Road (2) Eastbound | C56 to C57                            | 27.6                 | 409                                           |
| A944 Aberdeen to Alford to Strathdon Road (2) Westbound | C57 to C56                            | 32.6                 | 482                                           |
| C93C Clintery to Kingsford Road                         | C58 to C59                            | 4                    | N/A                                           |



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| Road name                                                               | Road located between Reference Points | Design Traffic (msa) | Commercial Vehicles at Year of opening (2012) |
|-------------------------------------------------------------------------|---------------------------------------|----------------------|-----------------------------------------------|
| North Kingswells Junction Link Road                                     | C60 to C61                            | 6.8                  | 77                                            |
| C89C Chapel of Stoneywood to Fairley Road (1)                           | C62 to C63                            | 7.3                  | 83                                            |
| C89C Chapel of Stoneywood to Fairley Road (2)                           | C64 to C65                            | 8                    | 0.7                                           |
| U90C Tulloch Road                                                       | C66 to C67                            | 4                    | N/A                                           |
| C89K Chapel of Stoneywood to Fairley Road Turning Head                  | C68 to C69                            | 4                    | N/A                                           |
| U53C Chapel of Stoneywood to Newton to Kirkhill Road Turning Head       | C70 to C71                            | 4                    | N/A                                           |
| U53C Chapel of Stoneywood to Newton to Kirkhill Road Turning Head       | C72 to C73                            | 4                    | N/A                                           |
| U53C Chapel of Stoneywood to Newton to Kirkhill Road Corner Improvement | C74 to C75                            | 4                    | N/A                                           |
| New B977 Echt to Balmedie Road (1)                                      | C76 to C77                            | 4.6                  | 68                                            |
| U198 Goval Cottages Road                                                | C78 to C79                            | 1                    | N/A                                           |
| Goval Villa Access Road                                                 | C80 to C81                            | 1                    | N/A                                           |
| Goval Villa Access Road Turning Head                                    | C82 to C83                            | 1                    | N/A                                           |
| Old A947 Aberdeen to Old Meldrum to Turriff Road Turning Head           | C84 to C85                            | 1                    | N/A                                           |
| Goval Farm Cottages Access Road                                         | C86 to C87                            | 1                    | N/A                                           |
| Goval West Roundabout to A947 Link Road (1)                             | C88 to C89                            | 8.3                  | 123                                           |
| Goval West Roundabout to A947 Link Road (2)                             | C90 to C91                            | 8.3                  | 123                                           |
| New A947 Aberdeen to Oldmeldrum to Turriff Road –                       | C92 to C93                            | 35.2                 | 521                                           |
| New B977 Echt to Balmedie Road (2)                                      | C94 to C95                            | 4.6                  | 68                                            |
| Old Toll House Access Road                                              | C96 to C97                            | 1                    | N/A                                           |

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| Road name                                                | Road located between Reference Points | Design Traffic (msa) | Commercial Vehicles at Year of opening (2012) |
|----------------------------------------------------------|---------------------------------------|----------------------|-----------------------------------------------|
| Old Toll House Access Road Turning Head and Field Access | C98 to C99                            | 1                    | N/A                                           |
| New B977 Echt to Balmedie Road (3)                       | C100 to C101                          | 32.1                 | 475                                           |
| Old B977 Echt to Balmedie Road Turning Head              | C102 to C103                          | 2                    | N/A                                           |
| Little Goval Access Road                                 | C104 to C105                          | 2                    | N/A                                           |
| New B977 Echt to Balmedie Road (4)                       | C106 to C107                          | 16.7                 | 247                                           |
| New B977 Echt to Balmedie Slip Road                      | C108 to C109                          | 15.7                 | 232                                           |
| Newmarcher Church Road Link Road                         | C110 to C111                          | 4                    | N/A                                           |
| New B977 Echt to Balmedie Road (6)                       | C111 to C112                          | 4                    | N/A                                           |
| New B977 Echt to Balmedie Road (5)                       | C113 to C114                          | 4                    | N/A                                           |
| Old Newmachar Church Road Turning Head                   | C115 to C116                          | 4                    | N/A                                           |
| Old Newmachar Church Road Turning Head                   | C117 to C118                          | 4                    | N/A                                           |
| New U19C Leuchlands to Cranbog to Shielhill Road (1)     | C119 to C120                          | 4                    | N/A                                           |
| New B999 Aberdeen to Tarves Road                         | C121 to C122                          | 5.2                  | 77                                            |
| New U19C Leuchlands to Cranbog to Shielhill Road (2)     | C123 to C124                          | 4                    | N/A                                           |
| Blackdog Access Road                                     | C125 to C126                          | 4                    | N/A                                           |
| New C1C Belhelvie to Wateridgemuir Road                  | C127 to C128                          | 4                    | N/A                                           |
| New C5K Lochton to Auchlunies to Nigg Road               | C129 to C130                          | 4                    | N/A                                           |
| New U63K Maryculter Road                                 | C131 to C132                          | 4                    | N/A                                           |
| Burnhead Access Road                                     | C133 to C134                          | 2                    | N/A                                           |
| New C30K Hillside to Batchart Road                       | C135 to C136                          | 4                    | N/A                                           |

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| Road name                                                               | Road located between Reference Points | Design Traffic (msa) | Commercial Vehicles at Year of opening (2012) |
|-------------------------------------------------------------------------|---------------------------------------|----------------------|-----------------------------------------------|
| U59K Banchory/Devenick to Sunnyside Road to Bishopton Access Road North | C137 to C138                          | 4                    | N/A                                           |
| U59K Banchory/Devenick to Sunnyside Road to Bishopton Access Road South | C139 to C140                          | 4                    | N/A                                           |
| C34K Access Track                                                       | C141 to C142                          | 4                    | N/A                                           |
| C34K Access Track                                                       | C143 to C144                          | 4                    | N/A                                           |
| New A956 Wellington Road Eastbound                                      | C145 to C146                          | 59.9                 | 931                                           |
| New A956 Wellington Road Westbound                                      | C146 to C145                          | 52.1                 | 808                                           |
| New U168K Old Stonehaven Road                                           | C147 to C148                          | 4                    | N/A                                           |
| New C5k Schoolhill to Lochton to Nigg Road                              | C149 to C150                          | 4                    | N/A                                           |
| U58K Haremosse to Checkbar Road                                         | C151 to C152                          | 4                    | N/A                                           |
| C5k Lochton to Auchlunies to Nigg Road                                  | C153 to C154                          | 4                    | N/A                                           |
| C5K Lochton to Auchlunies to Nigg Road Turning Head                     | C155 to C156                          | 4                    | N/A                                           |
| New A96 Craibstone Junction Link Road                                   | C157 to C158                          | 4                    | N/A                                           |
| Kirkhill Industrial Estate Link Road Northbound                         | C161 to C162                          | 31.2                 | 481                                           |
| Kirkhill Industrial Estate Link Road Southbound                         | C162 to C161                          | 32.8                 | 507                                           |
| A96 Aberdeen to Inverness Road (2) Eastbound                            | C163 to C164                          | 41.8                 | 647                                           |
| A96 Aberdeen to Inverness Road (2) Westbound                            | C164 to C163                          | 48.9                 | 757                                           |
| A96 Aberdeen to Inverness Road (3) Eastbound                            | C165 to C166                          | 76.7                 | 1201                                          |
| A96 Aberdeen to Inverness Road (3) Westbound                            | C166 to C165                          | 78.8                 | 1235                                          |
| Dyce Drive Northbound                                                   | C167 to C168                          | 35.4                 | 546                                           |
| Dyce Drive Southbound                                                   | C168 to C167                          | 40.2                 | 621                                           |

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| Road name                                        | Road located between Reference Points | Design Traffic (msa) | Commercial Vehicles at Year of opening (2012) |
|--------------------------------------------------|---------------------------------------|----------------------|-----------------------------------------------|
| Craibstone College Access Road (North)           | C169 to C170                          | 4                    | N/A                                           |
| A96 Park and Choose Slip Road                    | C184 to C185                          | 54.7                 | N/A                                           |
| Blackdog Junction Northbound Diverge Slip Road   | C171 to C172                          | 4                    | N/A                                           |
| Blackdog Junction Southbound Merge Slip Road     | C173 to C174                          | 4                    | N/A                                           |
| Charleston Junction Northbound Merge Slip Road   | C175 to C176                          | 4                    | N/A                                           |
| Charleston Junction Southbound Diverge Slip Road | C177 to C178                          | 4                    | N/A                                           |
| Milltimber roundabout                            | C41 to C41                            | 19.7                 | 292                                           |
| South Kingswells Roundabout                      | C50 to C50                            | 57                   | 844                                           |
| Dykeside Roundabout                              | C61 to C61                            | 16.2                 | 84                                            |
| Goval West Roundabout                            | C86 to C86                            | 12.5                 | 185                                           |
| Goval East Roundabout                            | C101 to C101                          | 27                   | 399                                           |
| B977 Realignment                                 | C191 to C192                          | 6.0                  | 65                                            |
| Balmedie Underpass                               | C239 to C240                          | 13.0                 | 135                                           |
| Millden Access                                   | C186 to C187                          | 4.0                  | 15                                            |
| Eigie Road                                       | C237 to C238                          | 13.0                 | 135                                           |
| Old Road                                         | C235 to C236                          | 9.0                  | 90                                            |
| A975 Realignment                                 | C211 to C212                          | 11.0                 | 110                                           |
| Existing A90                                     | C229 to C230                          | 4.0                  | 15                                            |
| Foveran Link Road                                | C213 to C214                          | 4.0                  | 20                                            |
| A90 Realignment                                  | C217 to C218                          | 4.0                  | 35                                            |
| B9000 East Realignment                           | C227 to C228                          | 4.0                  | 40                                            |
| B9000 West Realignment                           | C219 to C220                          | 4.0                  | 25                                            |
| Southfolds Access                                | C188 to C189                          | 4.0                  | N/A                                           |
| The Holdings                                     | C193 to C194                          | 4.0                  | N/A                                           |
| New Access Road/Track to Drumhead Cottage        | D227 to D228                          | 6.0                  | N/A                                           |
| Balmedie Link Road                               | C232 to C231                          | 4.0                  | N/A                                           |
| Orrock Overbridge                                | C201 to C202                          | 4.0                  | N/A                                           |

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| Road name                         | Road located between Reference Points | Design Traffic (msa) | Commercial Vehicles at Year of opening (2012) |
|-----------------------------------|---------------------------------------|----------------------|-----------------------------------------------|
| Dambræ Underpass / Westfield Road | C203 to C204                          | 4.0                  | N/A                                           |
| Stoneyards Access Road            | C205 to C206                          | 4.0                  | N/A                                           |
| Stoneyards Access Turning Head    | C207 to C208                          | 4.0                  | N/A                                           |
| Foveran Overbridge                | C215 to C216                          | 4.0                  | N/A                                           |
| Bridgend Access Road              | C221 to C222                          | 4.0                  | N/A                                           |
| Tarty Road Realignment            | C223 to C226                          | 4.0                  | N/A                                           |
| Orrock Access Realignment         | C199 to C200                          | 4.0                  | N/A                                           |
| Kirkhill Realignment              | C209 to C210                          | 4.0                  | N/A                                           |
| Keir Farm Underpass               | C243 to C244                          | 4                    | N/A                                           |
| Keir Farm Turning Head            | C245 to C246                          | 4                    | N/A                                           |
| The Holdings Turning Head         | C247 to C248                          | 4                    | N/A                                           |

Reference Points as noted in Tables 1A and 1B above are as shown on the Reference Drawings as described in Appendix 0/4 to the Specification.

- (iv) Subject to the other provisions of this Agreement, the Company shall consult and comply with the requirements of:

- (a) Transport Scotland
- (b) Aberdeen City Council; and
- (c) Aberdeenshire Council

as appropriate in connection with the pavement Design for all carriageway tie-ins that extend out-with the Reference Points described in Table 1 of Schedule 19 of the Agreement.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

- (v) Notwithstanding the pavement Design:
- (a) at roundabouts, the traffic flows used in the pavement Design on the circulatory carriageway and all arms for 50 metres from the Give Way line or up to the limits of the New Works Site shall be taken as 125 per cent of the most onerous traffic flow of the adjacent arms; and
  - (b) at junctions the traffic flows used in the pavement Design for the major road shall be used in the pavement Design for the minor road up to the corner radii tangent points on the minor road.
- (vi) The Design shall ensure that the road pavement shall extend transversely over the entire width of the carriageway, including adjacent slip roads from/to the back of the merge/diverge nose, and longitudinally between the

## Part 2 Specific Requirements

Reference Points of all roads as described in Table 1 of Schedule 19 of the Agreement.

- (vii) Porous asphalt surface courses shall not be permitted in the Design.
- (viii) Rolling crowns, as noted in DMRB HD33/06 paragraph 2.3, shall not be permitted in the New Works.
- (ix) Vertical joints between existing and new construction shall be painted with a polymer modified bond coat to Clause 920 of the Specification. The positioning of these joints within the wheel track zones shall be avoided although in areas where this is not viable, then appropriate strengthening measures shall be taken to ensure that the risk of reflective cracking is prevented. The joints shall be chamfered at 60 to 70 degrees where possible in order to aid the compaction of the adjoining new material.
- (x) The new surface course shall be constructed using an echelon paving technique.
- (xi) A bond coat shall be applied between all new bound pavement layers as well as between any of the existing layers and any overlay layer. The bond coat shall be a polymer modified bond coat to Clause 920 of the Specification. Where the overlying layer is required to be a thin surface course, the bond coat shall be appropriate to the requirements of the manufacturer of the system in question.

1.7.2 Specific Requirements for roads listed in paragraph 1.7.1 Table 1A.

- (i) The Design shall ensure that the surface course shall be a Transport Scotland approved polymer modified binder based thin surface course to Clause 942 of the Specification or TS2010 as introduced by Transport Scotland Interim Amendment Number 35.
- (ii) The thin surface course system shall have road/tyre noise levels to level 2, as defined in Clause 942.8 of the Specification and Table NG9/30 of Volume 2 of the MCHW.
- (iii) The Company may adopt alternative pavement Design standards to those contained in the DMRB and the Highways Agency Interim Advice Note 73/06, and alternative material specifications for all pavement materials other than the thin surface course system.
- (iv) Notwithstanding the foregoing, the use of rigid pavement construction shall not be permitted in the Design except for continuously reinforced concrete pavement (CRCP) which shall only be permitted in the Design if it is overlaid with a surface course in accordance with Paragraph 1.7.2 (i).
- (v) Notwithstanding any other provisions of this Agreement the minimum PSV of coarse aggregate in unchipped surfaces for the Design shall be 60.

1.7.3 Specific Requirements for roads listed in paragraph 1.7.1 Table 1B which shall become the maintenance responsibility of Transport Scotland as referenced in Table 1 of Schedule 19 of the Agreement

- (i) The Design shall ensure that the surface course shall be a Transport Scotland approved polymer modified binder based thin surface course to surface course specification TS2010, as introduced by Transport Scotland Interim Amendment Number 35, with a minimum thickness of 35 millimetres unless otherwise specified. The requirement within TS2010 for

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- a performance guarantee in accordance with Clause 942 of the Specification for Highway Works shall apply to surface integrity only.
- (ii) The thin surface course system shall have road/tyre noise levels to level 2, as defined in Clause 942.8 of the Specification and Table NG9/30 of Volume 2 of the MCHW.
  - (iii) All surface course systems specific to variants listed within this Section shall be required to undergo the Type Approval Installation Trial (TAIT) process detailed in TS2010 unless the proposed system holds a Certificate of Approval gained from a previous TAIT that was specific to the following variants:
    - (a) mixture design;
    - (b) production plant;
    - (c) surfacing subcontractor; and
    - (d) PSV declared
  - (iv) No system shall be used within the New Works unless it holds a Certificate of Approval gained from a previous TAIT or has been granted Approval to Proceed.
  - (v) For each individual system as outlined in Section 1.7.3 (ii), a trial panel comprising of not less than 20 tonnes of the proposed mixture and of a full lane width shall be used for Stage 2 of the TAIT process and for the skid resistance compliance testing performed after 4 weeks within Stage 3 of the TAIT process. The location and volume of vehicular traffic for the panel(s) shall be agreed with the Contracting Authority. Approval to Proceed shall be granted for systems demonstrated to be compliant with the 4 week skid resistance requirements stated in Table 2.7 of TS2010.
  - (vi) Transport Scotland Interim Approval shall be granted for a surface course system following the successful demonstration of compliance with the relevant skid resistance requirements stated in Table 2.7 of TS2010 after 6 months of trafficking.
  - (vii) Transport Scotland Final Approval shall be granted for a surface course system following the successful demonstration of compliance with the relevant skid resistance requirements stated in Table 2.8 of TS2010 after 2 years of trafficking and following review of the performance of the material.
  - (viii) The Company shall provide a "Thin Surface Course System Approval Certificate" in accordance with the Certification Procedure.
  - (ix) The Company shall be required to carry out all skid resistance compliance surveys associated with the TAIT approval process for a particular surface course system.
  - (x) Where full depth pavement construction is provided in the New Works it shall have a minimum thickness of 450 millimetres.
  - (xi) The base and binder course materials shall be EME2.
  - (xii) The nominal aggregate size for the binder course layer shall be 10 millimetres and for base layers the nominal aggregate size shall be 14 millimetres.

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- (xiii) Notwithstanding any other provisions of this Agreement the minimum polished stone value (“PSV”) of coarse aggregate in un-chipped surfaces shall be 60.
  - (xiv) The foundation class shall be Class 3, as detailed in IAN73/06, and shall be tested in-line with the methodology outlined in Highways Agency IAN73/06.
  - (xv) Where the existing pavement is to be retained and strengthened by overlay, the existing surface course shall be removed prior to the placement of the new bituminous material.
  - (xvi) Where the pavement design uses the existing pavement the requirement of Highways Agency IAN73/06 to provide a constant thickness of all foundation layers over the full width of the pavement shall not apply.
  - (xvii) The requirements of Highways Agency IAN73/06 to maintain continuity of drainage of the pavement foundation and to provide a down slope route from the sub-base to the subsurface drain shall apply and the Company shall ensure compliance.
  - (xviii) All lanes of the carriageway(s) and, where applicable, hard strips, hard shoulders, lay-bys, bus lay-bys and maintenance crossing points for all roads described in Table 1 of Schedule 19 of the Agreement shall be sufficient to carry the design traffic in the left hand lane of the relevant carriageway.
  - (xix) Notwithstanding the foregoing the use of rigid pavement construction shall not be permitted in the Design except for continuously reinforced concrete pavement (CRCP) which shall only be permitted in the Design if it is overlaid with a surface course in accordance with Paragraph 1.7.3 (ii).
  - (xx) Temporary running shall not be permitted on planed surfaces.
  - (xxi) Where a regulating material is required then this shall be stone mastic asphalt complying with Clause 937 or base or binder course asphalt concrete complying with Clause 929 or hot rolled asphalt complying with Clause 943.
  - (xxii) Where existing gullies and ironwork are to be removed within proposed running lanes then the full depth of pavement shall be removed and replaced with a pavement construction that shall meet the appropriate design loading requirements. Areas being rectified shall form a minimum width of 1.8 metres and be at least 5 metres in length. Each new layer shall be stepped-in by a minimum of 150 millimetres transversely and 500 millimetres longitudinally with the joints being treated in accordance with clause 1.7.1 (ix). The bearing capacity of the existing sub-base shall be tested prior to the placement of the new bituminous material with a minimum CBR of 30% being required. Where the CBR falls below 30% then the material shall be replaced with a new foundation construction designed in accordance with IAN 73/06 (HD 25) and HD26. Where full depth pavement construction is provided in the Works it shall have a minimum design thickness of 450 millimetres of non-frost susceptible material.
  - (xxiii) The Company shall ensure that directional drilling is undertaken where drains, services and the like are required to cross carriageways. Open carriageway trenching shall not be permitted without prior agreement from the Contracting Authority.



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- 1.7.4 Specific Requirements for roads listed in paragraph 1.7.1 Table 1B which shall become the maintenance responsibility of Aberdeen City Council and/or Aberdeenshire Council as referenced in Table 1 of Schedule 19 of the Agreement
- (i) The Side Road pavement Design for all roads described in Table 1B of Schedule 19 of the Agreement within the Council boundaries shall be designed for a 40-year Design life in accordance with the DMRB.
  - (ii) The pavement Design of these roads shall ensure that where the pavement of any of the existing roads affected by the New Works shall be incorporated, its residual life shall be assessed and the total pavement construction shall provide a Design life equivalent to that for new pavements in accordance with the DMRB.
  - (iii) The use of the Analytical Approach Design Method outlined in HD26 of the DMRB shall not be permitted in the pavement Design of these roads when standard Designs and standard materials as defined in HD26 of the DMRB are used in the Design.
  - (iv) In respect of Figure 2.1 of HD26 of the DMRB and notwithstanding any other provision of this Agreement, for these roads the pavement Design thickness of combined bituminous layer shall be inclusive of the full thickness of the chosen surface course material.
  - (v) In respect of Figure 2.1 of HD26 of the DMRB and notwithstanding any other provision of this Agreement, for these roads the pavement Design shall ensure that the binder course and base course shall perform in conjunction with the chosen surface course as identified in Clause 911 of the Specification.
  - (vi) The Company shall consult and comply with:
    - (a) Aberdeen City Council; and
    - (b) Aberdeenshire Councilas appropriate with regard to the Pavement Design for these roads.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.
  - (vii) The pavement Design for these roads shall ensure that all flexible pavements shall incorporate a binder course which shall be at least 55 millimetres thick.
  - (viii) The Company's choice of binder course material shall be compatible with the choice of surface course material.
  - (ix) In all cases where asphaltic material shall be used in the pavement Design for these roads it shall be to BS 594987 & BS EN 13108/BS PD 6691.
  - (x) In addition, asphaltic material in the pavement for these roads shall be a 'preferred' mix as identified in BS 594987.
  - (xi) The existing surface course(s) shall be removed prior to the placement of the new bituminous material.
  - (xii) New surface course(s) for these roads shall be Hot Rolled Asphalt.
  - (xiii) Paragraph 7.23 of HD30 of the DMRB shall be deleted and replaced with the following:

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“If Heavy Duty Macadam (HDM) or Dense Bitumen Macadam with 50 penetration grade binder (DBM50) or High Modulus Base Material with 35 penetration grade binder (HMB35) shall be used in the Design, then some reduction in overlay thickness shall be possible. This shall be calculated by applying a maximum 5 percent reduction to the total thickness of base and binder course materials which would be required when using Dense Bitumen Macadam (DBM) or Hot Rolled Asphalt (HRA) base and binder course materials to give the total thickness of base and binder course materials required. Allowance should be made for any deterioration or any other deficiencies. The pavement Design for these roads shall incorporate between each asphaltic pavement layer and the overlying surface course system, a polymer modified bond coat to Clause 920 to Volume 1 of the MCHW, applied as manufacturers’ recommendations. Where the overlying layer shall be a thin surface course system the bond coat shall be appropriate to the requirements of the manufacturer of the system in question.”

- (xiv) The use of rigid, rigid composite and flexible composite pavement construction shall not be permitted in the Design.
- (xv) The Design shall ensure that where the pavement incorporates any existing pavement concrete overlays shall not be permitted.
- (xvi) The requirements of the Highways Agency Interim Advice Note 73/06 (Draft HD 25) to maintain continuity of drainage of the pavement foundation and to provide a down slope route from the sub-base to the subsurface drain shall apply in the Design.
- (xvii) The Design shall ensure that all lanes of the carriageway(s) and, where applicable, hard strips, hard shoulders, lay-bys, bus lay-bys and maintenance crossing points for all of these roads shall be sufficient to carry the Design traffic in the left hand lane of the relevant carriageway.
- (xviii) Where full depth pavement construction shall be provided in the Design it shall have a minimum thickness of 450 millimetres.
- (xix) Joints between existing and new construction shall be painted with a polymer modified bond coat to Clause 920 of the Specification. The positioning of these joints within the wheel track zones shall be avoided although in areas where this is not viable, then appropriate strengthening measures shall be taken to ensure that the risk of reflective cracking is prevented. The joints shall be chamfered at 60 to 70 degrees where possible in order to aid the compaction of the adjoining new material.
- (xx) Temporary running shall not be permitted on planed surfaces.
- (xxi) Where a regulating material is required then this shall be base or binder course asphalt concrete complying with Clause 929 or hot rolled asphalt complying with Clause 943.
- (xxii) The Company shall ensure that directional drilling is undertaken where drains, services and the like are required to cross existing and new carriageways in the New Works. Open carriageway trenching shall not be permitted without prior agreement from the Contracting Authority.
- (xxiii) Notwithstanding any other provisions of this Agreement the minimum PSV of chippings for the Design shall be 55.

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- (xxiv) The use of HMB35 material as per HD26 of the DMRB shall not require a Departure from Standard to be granted by the Overseeing Organisation.
- (xxv) Where HMB35 material shall be used as a base course in the pavement design then the corresponding binder course forming part of such design shall be HMB35 material.
- 1.7.5 Road pavement for New Access Road/Tracks and Accommodation Works Access Tracks:
- (i) Bituminous surfaced access construction type, AR1, shall comprise:
- (a) 300 millimetres thick type 1 sub-base to Clause 803 of the Specification;
  - (b) 100 millimetres thick Dense Bitumen Macadam to Clause 903 of the Specification; and
  - (c) 50 millimetres thick Close Graded Bitumen Macadam to Clause 912 of the Specification.
- (ii) Concrete access construction type, AR2, shall comprise:
- (a) 300 millimetres thick type 1 sub-base to Clause 803 of the Specification; and
  - (b) 150 millimetres thick C40 concrete to BS5328 surfacing with expansion joints at 40 metres centres and contraction joints at 4 metres centres (see Drawing Numbers C1, C2 and C3 to Volume 3 of the MCHW). The surface finish shall be tamped or brushed.
- (iii) Unsurfaced access construction type, AR3, shall comprise:
- (a) 300 millimetres minimum thick capping material class 6F1, 6F2 or 6F3 to Clause 613 of the Specification; and
  - (b) 150 millimetres thick type 1 sub-base to Clause 803 to Volume 1 of the MCHW, sealed with rolled/vibrated crushed rock fines.
- (iv) The access construction type for New Access Roads/Tracks, shall be as stated in Table 1C.

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Table 1C New Access Road/Tracks Construction

| Road Name                                                                  | Road Located between Reference Points | Access Construction Type<br>(Refer to clause 1.7.5 (i), (ii) and (iii)) |
|----------------------------------------------------------------------------|---------------------------------------|-------------------------------------------------------------------------|
| Mains of Ury Retention Pond Access Track Turning Head                      | D03 to D04                            | AR1 or AR2 or AR3                                                       |
| Megray Farm Access Road                                                    | D05 to D06                            | AR1                                                                     |
| Allochie Access Track                                                      | D07 to D08                            | AR1 or AR2 or AR3                                                       |
| Combined Burn of Muchalls Retention Pond and Emergency Lay-by Access Track | D09 to D10                            | AR1                                                                     |
| Burn of Muchalls Retention Pond Access Track Turning Head                  | D11 to D12                            | AR1                                                                     |
| Combined Field and Emergency Lay-by Access Track                           | D13 to D14                            | AR1                                                                     |
| North Cookney Access Road                                                  | D15 to D16                            | AR1                                                                     |
| North Cookney Croft Access Road (1)                                        | D17 to D18                            | AR1                                                                     |
| North Cookney Croft Access Road (2)                                        | D19 to D20                            | AR1                                                                     |
| Combined Field Access/East Rothnick Retention Pond Access Track            | D21 to D22                            | AR1 or AR2 or AR3                                                       |
| East Rothnick Retention Pond Access Track                                  | D23 to D24                            | AR1 or AR2 or AR3                                                       |
| North Rothnick Access Road                                                 | D25 to D26                            | AR1                                                                     |
| Rothnick to Crossley Access Track                                          | D27 to D28                            | AR1 or AR2 or AR3                                                       |
| Kingcausie/Eastland Access Road                                            | D29 to D30                            | AR1                                                                     |
| Kingcausie Access Road                                                     | D31 to D32                            | AR1 or AR2 or AR3                                                       |
| Kingcausie Access Track                                                    | D33 to D34                            | AR1 or AR2 or AR3                                                       |
| Milltimber Retention Pond Access Track                                     | D35 to D36                            | AR1 or AR2 or AR3                                                       |
| Milltimber Retention Pond Access Track Turning Head                        | D37 to D38                            | AR1 or AR2 or AR3                                                       |
| Kippie Lodge Track                                                         | D39 to D40                            | AR1                                                                     |
| Laggan Cottage Access Road                                                 | D41 to D42                            | AR1                                                                     |
| Hill of Milltimber Access Road                                             | D43 to D44                            | AR1                                                                     |

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| <b>Road Name</b>                                   | <b>Road Located between Reference Points</b> | <b>Access Construction Type</b><br><b>(Refer to clause 1.7.5 (i), (ii) and (iii))</b> |
|----------------------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------|
| Beanshill Access Track                             | D45 to D46                                   | AR1 or AR2 or AR3                                                                     |
| Silverburn Retention Pond Access Road              | D47 to D48                                   | AR1 or AR2 or AR3                                                                     |
| Silverburn Retention Pond Access Road Turning Head | D49 to D50                                   | AR1 or AR2 or AR3                                                                     |
| Broomhill Access Road (1)                          | D51 to D52                                   | AR1 or AR2                                                                            |
| Moss of Auchlea Access Road                        | D53 to D54                                   | AR1 or AR2 or AR3                                                                     |
| Gairn Farm Access Track                            | D55 to D56                                   | AR1 or AR2 or AR3                                                                     |
| Broomhill Access Road (2)                          | D57 to D58                                   | AR1 or AR2 or AR3                                                                     |
| Moss-side of Auchlea Access Road                   | D59 to D60                                   | AR1 or AR2 or AR3                                                                     |
| Field Access Road from Moss of Auchlea Access Road | D61 to D62                                   | AR1 or AR2 or AR3                                                                     |
| Tigh Na Bruaich Access Road                        | D63 to D64                                   | AR1 or AR2 or AR3                                                                     |
| East Kingsford Cottage Access Road                 | D65 to D66                                   | AR1                                                                                   |
| Kingsford Retention Pond Access Track              | D67 to D68                                   | AR1 or AR2 or AR3                                                                     |
| Kingsford Retention Pond Access Track Turning Head | D69 to D70                                   | AR1 or AR2 or AR3                                                                     |
| Kingsford Industrial Units Access Road             | D71 to D72                                   | AR1                                                                                   |
| Cairdhillock Track                                 | D73 to D74                                   | AR1 or AR2 or AR3                                                                     |
| Fairley Cloghill Access Road                       | D75 to D76                                   | AR1 or AR2 or AR3                                                                     |
| West Cloghill House Access Road                    | D77 to D78                                   | AR1 or AR2 or AR3                                                                     |
| Woodside of Cloghill Access Road (1)               | D79 to D80                                   | AR1 or AR2 or AR3                                                                     |
| Woodside of Cloghill Access Road (2)               | D79A to D80A                                 | AR1 or AR2 or AR3                                                                     |

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| <b>Road Name</b>                                   | <b>Road Located between Reference Points</b> | <b>Access Construction Type</b><br><b>(Refer to clause 1.7.5 (i), (ii) and (iii))</b> |
|----------------------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------|
| Hillhead of Derbeth Access Road                    | D81 to D82                                   | AR1 or AR2 or AR3                                                                     |
| Derbeth Farm Access Road                           | D83 to D84                                   | AR1 or AR2 or AR3                                                                     |
| North Kingswells Access Track                      | D85 to D86                                   | AR1 or AR2 or AR3                                                                     |
| Kepplestone Access Track                           | D87 to D88                                   | AR1 or AR2 or AR3                                                                     |
| Craibstone College Access Road                     | D89 to D90                                   | AR1                                                                                   |
| Craibstone College Turning Head                    | D91 to D92                                   | AR1                                                                                   |
| Bogenjoss Access Track (1)                         | D93 to D94                                   | AR1 or AR2 or AR3                                                                     |
| Kirkhill Access Track                              | D95 to D96                                   | AR1 or AR2 or AR3                                                                     |
| Bogenjoss Access Track (2)                         | D97 to D98                                   | AR1 or AR2 or AR3                                                                     |
| Kirkhill Forest Access Track                       | D99 to D100                                  | AR1 or AR2 or AR3                                                                     |
| Bogenjoss Retention Pond Access Track              | D101 to D102                                 | AR1 or AR2 or AR3                                                                     |
| Bogenjoss Retention Pond Access Track Turning Head | D103 to D104                                 | AR1 or AR2 or AR3                                                                     |
| Pitmedden Farm Access Track 1                      | D105 to D106                                 | AR1 or AR2 or AR3                                                                     |
| Pitmedden Farm Access Track 2                      | D107 to D108                                 | AR1 or AR2 or AR3                                                                     |
| Dyce Retention Pond Access Track                   | D109 to D110                                 | AR1 or AR2 or AR3                                                                     |
| Dyce Retention Pond Access Track Turning Head      | D111 to D112                                 | AR1 or AR2 or AR3                                                                     |
| River Don Access Track                             | D113 to D114                                 | AR1 or AR2 or AR3                                                                     |
| River Don Access Track Turning Head                | D115 to D116                                 | AR1 or AR2 or AR3                                                                     |
| Goval West Retention Pond Access Track             | D117 to D118                                 | AR1 or AR2 or AR3                                                                     |

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| <b>Road Name</b>                                     | <b>Road Located between Reference Points</b> | <b>Access Construction Type</b><br><b>(Refer to clause 1.7.5 (i), (ii) and (iii))</b> |
|------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------|
| Goval West Retention Pond Access Track Turning Head  | D119 to D120                                 | AR1 or AR2 or AR3                                                                     |
| Beech Cottage/Home Farm Access Track                 | D121 to D122                                 | AR1                                                                                   |
| Beech Cottage Access Track                           | D123 to D124                                 | AR1                                                                                   |
| Meadowhead/Waulkmill Road                            | D125 to D126                                 | AR1 or AR2 or AR3                                                                     |
| Goval East Retention Pond Access Track               | D127 to D128                                 | AR1 or AR2 or AR3                                                                     |
| Goval East Retention Pond Access Track Turning Head  | D129 to D130                                 | AR1 or AR2 or AR3                                                                     |
| Lochgreens Access Road                               | D131 to D132                                 | AR1 or AR2                                                                            |
| Lochgreens to Lochhills Access Road                  | D133 to D134                                 | AR1 or AR2 or AR3                                                                     |
| Lochgreens Cottage Access Road                       | D135 to D136                                 | AR1 or AR2                                                                            |
| Lochgreens Retention Pond Access Track               | D137 to D138                                 | AR1 or AR2 or AR3                                                                     |
| Lochgreens Retention Pond Access Track/Turning Head+ | D139 to D140                                 | AR1 or AR2 or AR3                                                                     |
| North Cranfield Field Access Track 1                 | D141 to D142                                 | AR1 or AR2 or AR3                                                                     |
| North Cranfield Field Access Track 2                 | D143 to D144                                 | AR1 or AR2 or AR3                                                                     |
| North Cranfield Field Access Track 3                 | D145 to D146                                 | AR1 or AR2 or AR3                                                                     |
| North Cranfield Field Access Track 4                 | D147 to D148                                 | AR1 or AR2 or AR3                                                                     |
| Cranfield Access Road                                | D149 to D150                                 | AR1                                                                                   |
| Cranfield Access Track                               | D151 to D152                                 | AR1 or AR2 or AR3                                                                     |
| Cranfield Retention Pond Access Track (1)            | D153 to D154                                 | AR1 or AR2 or AR3                                                                     |
| Cranfield Retention Pond Access Track (2)            | D155 to D156                                 | AR1 or AR2 or AR3                                                                     |
| Middleton Steadings Access Road                      | D157 to D158                                 | AR1 or AR2                                                                            |
| Middlefield Access Road                              | D159 to D160                                 | AR1 or AR2 or                                                                         |

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| <b>Road Name</b>                          | <b>Road Located between Reference Points</b> | <b>Access Construction Type</b><br><b>(Refer to clause 1.7.5 (i), (ii) and (iii))</b> |
|-------------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------|
|                                           |                                              | AR3                                                                                   |
| Blackdog West Retention Pond Access Road  | D161 to D162                                 | AR1 or AR2 or AR3                                                                     |
| North Tarbothill Access Track             | D163 to D164                                 | AR1                                                                                   |
| Seaview Access Track                      | D165 to D166                                 | AR1 or AR2 or AR3                                                                     |
| Tarbothill Landfill Access Road           | D167 to D168                                 | AR1                                                                                   |
| Tarbothill Retention Pond Access Track    | D169 to D170                                 | AR1 or AR2 or AR3                                                                     |
| Wester Hatton Cottages Access Road        | D171 to D172                                 | AR1 or AR2                                                                            |
| Wester Hatton Retention Pond Access Track | D173 to D174                                 | AR1 or AR2 or AR3                                                                     |
| Wester Hatton Cottages Access Track 2     | D175 to D176                                 | AR1 or AR2 or AR3                                                                     |
| Wester Hatton Cottages Access Track 1     | D177 to D178                                 | AR1 or AR2                                                                            |
| Wester Hatton Cottages Access Track 3     | D179 to D180                                 | AR1 or AR2 or AR3                                                                     |
| Blackdog Industrial Estate Access Road    | D181 to D182                                 | AR1 or AR2                                                                            |
| Wester Hatton to C1C Access Road          | D183 to D184                                 | AR1 or AR2                                                                            |
| Wester Hatton Access Road                 | D185 to D186                                 | AR1 or AR2                                                                            |
| Burnhead Retention Pond Access Track      | D187 to D188                                 | AR1 or AR2 or AR3                                                                     |
| Whitestone Access Road                    | D189 to D190                                 | AR1 or AR2                                                                            |
| Burnhead Access Track                     | D191 to D192                                 | AR1 or AR2 or AR3                                                                     |
| Merchants Croft Access Track              | D193 to D194                                 | AR1 or AR2 or AR3                                                                     |
| Sunnyside Farmhouse Access Road           | D195 to D196                                 | AR1                                                                                   |
| Bishopston Access Road                    | D197 to D198                                 | AR1                                                                                   |
| Bishopston Field Access                   | D199 to D200                                 | AR1 or AR2 or AR3                                                                     |
| Hare Moss Access Track                    | D201 to D202                                 | AR1 or AR2 or AR3                                                                     |
| Hare Moss Retention Pond Access Track     | D203 to D204                                 | AR1 or AR2 or AR3                                                                     |



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| <b>Road Name</b>                                          | <b>Road Located between Reference Points</b> | <b>Access Construction Type</b><br><b>(Refer to clause 1.7.5 (i), (ii) and (iii))</b> |
|-----------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------|
| Pinewood Access Track                                     | D205 to D206                                 | AR1                                                                                   |
| Bothiebrig Access Track 1                                 | D207 to D208                                 | AR1                                                                                   |
| Bothy Brig Cottage Access Track 1                         | D209 to D210                                 | AR1                                                                                   |
| Whistlebrae Steading Turning Head                         | D211 to D212                                 | AR1 or AR2 or AR3                                                                     |
| Charleston Access Track                                   | D213 to D214                                 | AR1 or AR2 or AR3                                                                     |
| Walton Retention Pond Access Track                        | D215 to D216                                 | AR1 or AR2 or AR3                                                                     |
| Walton Retention Pond Access Track Turning Head           | D217 to D218                                 | AR1 or AR2 or AR3                                                                     |
| Craibstone Retention Pond Access Track                    | D219 to D220                                 | AR1 or AR2 or AR3                                                                     |
| Craibstone Retention Pond Access Track Turning Head       | D221 to D222                                 | AR1 or AR2 or AR3                                                                     |
| Bishopton Access Road to Bishopton Field Access Link Road | D223 to D224                                 | AR1 or AR2 or AR3                                                                     |
| New Easter Hatton Link Access Road                        | D172 to D259                                 | AR1 or AR2                                                                            |
| New Access Road/Track to Southfolds Access                | D225 to D226                                 | AR1                                                                                   |
| New Access Road/Track to Drumhead Cottage                 | D227 to D228                                 | AR1                                                                                   |
| New Access Road/Track to Dyce Road Detention Pond         | D229 to D230                                 | AR1 or AR2 or AR3                                                                     |
| New Access Road/Track at Hill of Menie Croft Realignment  | D233 to D234                                 | AR1 or AR2 or AR3                                                                     |
| New Access Road/Track to Aikenshill Detention Pond        | D235 to D236                                 | AR1 or AR2 or AR3                                                                     |
| New Access Road/Track at Pitmillan Overbridge             | D237 to D238                                 | AR1                                                                                   |
| New Access Road/Track to Tarty Detention Pond             | D239 to D240                                 | AR1 or AR2 or AR3                                                                     |
| New Access Road/Track to Pitmillan Detention Basin        | D241 to D242                                 | AR1 or AR2 or AR3                                                                     |
| New Access Road/Track at Foveran Lade                     | D243 to D244                                 | AR1 or AR2 or AR3                                                                     |

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| <b>Road Name</b>                                            | <b>Road Located between Reference Points</b> | <b>Access Construction Type</b><br><b>(Refer to clause 1.7.5 (i), (ii) and (iii))</b> |
|-------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------|
| New Access Road/Track to Foveran Detention Basin B          | D244 to D245                                 | AR1 or AR2 or AR3                                                                     |
| New Access Road/Track to Foveran Detention Basin A          | D247 to D248                                 | AR1 or AR2 or AR3                                                                     |
| New Access Road/Track to Dambrae Detention Basin - Access 1 | D249 to D250                                 | AR1 or AR2 or AR3                                                                     |
| New Access Road/Track to South Orrock Detention Basin       | D251 to D252                                 | AR1 or AR2 or AR3                                                                     |
| New Access Road/Track at Balmedie Link Road                 | D253 to D254                                 | AR1                                                                                   |
| New Access Road/Track to Balmedie Detention Basin           | D255 to D256                                 | AR1                                                                                   |
| New Access Road/Track - South from Balmedie                 | D257 to D279                                 | AR1 or AR2 or AR3                                                                     |
| New Access Track to Easter Hatton Detention Basin           | D261 to D262                                 | AR1 or AR2 or AR3                                                                     |
| New Access - South Orrock Underpass                         | D263 to D264                                 | AR1 or AR2                                                                            |
| New Access Road/Track from Bog Roy                          | D265 to D266                                 | AR1 or AR2 or AR3                                                                     |
| New Access Road/ Track to Rashierieve                       | D267 to D268                                 | AR1 or AR2 or AR3                                                                     |
| New Access Road/Track at Cairnie Law                        | D269 to D270                                 | AR1 or AR2 or AR3                                                                     |
| New Access Road/Track at Southlea                           | D271 to D272                                 | AR1 or AR2 or AR3                                                                     |
| New Access Road/Track from Bridgend Access Road             | D275 to D276                                 | AR1                                                                                   |
| New Access Track - Balmedie Detention Basin                 | D277 to D278                                 | AR1                                                                                   |
| Existing ANM/Taylor's Access Track                          | D258 to D279                                 | AR1 or AR2 or AR3                                                                     |

## 1.8 Kerbs, Footways, Paved Areas, Lay-bys and Bus Stops

### 1.8.1 Kerbing

- (i) Kerbing shall be provided in the Design as described in Table 1 of Schedule 19 of the Agreement together with the following:
  - (a) all turning areas;
  - (b) all lay-bys and bus lay-bys;
  - (c) all non-motorised Users crossings;
  - (d) Police observation platforms;
  - (e) ITS maintenance hard-standing areas;
  - (f) Bridge decks; and
  - (g) On side roads under Underbridges.
- (ii) Where a footway is adjacent to a carriageway or within 2 metres of a carriageway, the carriageway kerbing shall be half battered. At all other locations where kerbing is required, splay kerbing shall be used unless otherwise specified. Precast concrete flat top kerbing shall be used to edge the footway in the absence of a carriageway kerb.
- (iii) Dropped kerbs shall be provided at all non-motorised Users crossings and shall be suitable for pedestrians with prams and disabled using a wheelchair.
- (iv) Where the area at the drop crossing is not sufficiently drained using a road drainage gully upstream of the crossing then a combined kerb and drainage type drop kerb shall be used to ensure the crossing stays free from ponding of water.
- (v) The Company shall consult and comply with the requirements of;
  - (a) Aberdeen City Council; and
  - (b) Aberdeenshire Council;as appropriate with regard to all details for the provision of dropped kerb arrangements for Side Roads.

### 1.8.2 Footways, Footpaths and Combined Footways/cycle tracks

- (i) Notwithstanding the other requirements of this Agreement, the Design for footways, footpaths and combined footway/cycle tracks shall comprise:
  - (a) 150 millimetres of type 1 sub-base to Clause 903 of the Specification;
  - (b) 50 millimetres dense macadam binder course to Clause 906 of the Specification; and
  - (c) 25 millimetres rolled asphalt surface course to Clause 909 of the Specification.

Prior to compaction of surface course, 6 millimetre or 10 millimetre white limestone chippings shall be applied at a rate of 1 kilogram per square metre.

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- (ii) Footways, footpaths and combined footway/cycle tracks shall include but shall not be limited to those described in Table 2 of Schedule 19 of the Agreement and elsewhere in these New Works Requirements.
- Allowance shall be made in the Design to accommodate widths and tie-ins and any other features affecting the width and otherwise of the footways, footpaths and combined footway/cycle tracks.
- Where possible, footways and cycle tracks shall be out-with the road edge.
- (iii) Footways, footpaths and combined footway/cycle tracks in the Design shall be constrained by pre-cast concrete kerbing and edging.
- (iv) Notwithstanding the requirements of 1.1.9 (ii) footways, footpaths and combined footway/cycle tracks in the Design shall have a maximum crossfall of 2.5 percent.
- (v) Footways, footpaths and combined footway/cycle tracks in the Design shall tie-in to existing footways, footpaths and combined footway/cycle tracks at all interfaces and extremities of existing footways, footpaths and combined footway/cycle tracks respectively.
- (vi) The asphaltic layers of footways, footpaths and combined footway/cycle tracks shall be machine laid.
- (vii) All footways, footpaths and combined footway/cycle tracks in the Design shall incorporate sufficient drainage to ensure that they shall be kept free from standing water.
- (viii) Immediately prior to the laying of type 1 sub-base the formation shall be treated with an application of weed killer.
- (ix) The Design shall include tactile paving slabs over the full width of footways, footpaths and combined footway/cycle tracks at road crossings. Tactile paving slabs shall be light grey in colour.
- (x) Notwithstanding the requirements of 1.8.2(i) to 1.8.2(xi) inclusive, combined footway/cycle tracks shall be designed in accordance with TA90 of the DMRB and "Cycling by Design" 2010, Scottish Executive.
- (xi) The Company shall consult and comply with the requirements of Sustrans with regard to the Design for kerbing, crossing points and access points from adjacent roads on combined footway/cycle tracks and otherwise forming part of the National Cycle routes in the vicinity of the New Works Site.
- The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

### 1.8.3 Paved Areas

- (i) Pedestrian refuge islands shall be of flexible construction in accordance with paragraph 1.8.2(i).
- (ii) Deflection islands less than 20 square metres in area shall be of flexible construction in accordance with paragraph 1.8.2(i).
- (iii) Deflection islands larger than 20 square metres in area, the outer circumference to roundabouts and roundabout entry and exit roads shall have their outer edge (i.e. behind the kerb) paved with 80 millimetres deep concrete pavements to a width of 0.7 metres and this paving shall extend to

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the limit of the radii of the roundabouts and roundabout entry and exit roads.

- (iv) Roundabout central islands shall have 80 millimetre deep concrete pavements to a width of 2.0 metres. The Design shall include chevron block pavements as per diagram 515.2 of the Traffic Signs Regulations and General Directions 2002.
- (v) The central reserve on new Trunk Roads shall consist of 20mm single size chippings, to a minimum depth of 100mm and shall incorporate a vegetation repressing membrane. The chippings shall be light grey in colour.

#### 1.8.4 Hard Landscaping Requirements for areas around Traffic Scotland Equipment (TSE), Lighting Pillars and Traffic Signal Pillars.

- (i) The Company shall provide hard landscaping around each TSE site or group of sites, lighting control pillars and traffic signal control pillars. The typical layout for hard landscaping at these locations is shown in the NDX Drawings as listed in Appendix 0/4 to the Specification in Schedule 2, part 3.
- (ii) Hard landscaping shall comprise but shall not be limited to access paths and steps, pedestrian handrails and vehicle hard standings and any necessary structures and retaining walls. The hard landscaping shall ensure safe use of and maintenance of all equipment
- (iii) Paving around each TSE site shall be standardised but detailed to suit each equipment site.
- (iv) The Company shall ensure that the hard landscaping for each site enables future maintenance works to be undertaken without presenting a hazard to maintenance personnel or damage to adjacent slopes or landscaping.
- (v) Where more than one item of equipment is located at the site the paving shall be installed to create an integrated site preventing the need for soft landscaping maintenance to be undertaken within the grouping of equipment.
- (vi) Paths and steps shall be provided from the location where maintenance personnel will park their vehicle to the paving around the equipment without any detrimental effect on the operation of the network and the need for traffic management. Paths and steps shall have a minimum clear width of one metre. The combined length of the path and steps shall be a maximum of 50 metres unless otherwise agreed by the Contracting Authority.
- (vii) A vehicle hard standing shall be provided at the edge of the carriageway at each TSE VMS Site to enable maintenance personnel to park and access their vehicle safely off the carriageway. The vehicle hard standing surface shall be concrete cellular grassed paving except for areas where pedestrians may walk. A typical layout is shown on NDX drawing number 1072 as listed in Appendix 0/4 to the Specification in Schedule 2, Part 3.
- (viii) Retaining walls shall be permitted as required to enable the installation of an equipment site and any associated hard landscaping.

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- (ix) A paved area of not less than two square metres shall be provided to give a working area in front of each Traffic Equipment Distribution Pillar (TEDP) and TP.
- (x) Hard landscaping shall include, as necessary, pedestrian handrails to prevent any user or maintenance personnel falling

## 1.9 Traffic Signs, Road Markings and Studs

### 1.9.1 General

- (i) The Design, construction and completion of traffic signs, road markings and studs shall be in accordance with:
  - (a) The Traffic Signs Regulations and General Directions 2002;
  - (b) Traffic Signs Manual Chapter 1 (1982) - Introduction;
  - (c) Traffic Signs Manual Chapter 2 – Determination of x-height;
  - (d) Traffic Signs Manual Chapter 3 (2008) – Regulatory Signs;
  - (e) Traffic Signs Manual Chapter 4 (2013) – Warning Signs;
  - (f) Traffic Signs Manual Chapter 5 (2003) – Road Markings;
  - (g) Traffic Signs Manual Chapter 7 (2013) – The Design of Traffic Signs;
  - (h) Traffic Signs Manual Chapter 8 (Part 1) (2009) – Road Works and Temporary Situations – Design;
  - (i) Traffic Signs Manual Chapter 8 (Part 2) (2009) – Road Works and Temporary Situations – Operations;
  - (j) The DMRB; and
  - (k) Local transport Note 1/94.
- (ii) With particular regard to X-height the Company shall comply with the requirements of the Traffic Sign Manual Chapter 2 – Determination of X-height. When considering a reduction in X-height, the Company shall be required to gain written approval of the Contracting Authority for such a proposal, including where site space is limited or where there are special amenity considerations.
- (iii) With regard to the details for the provision of traffic signs, road markings and studs for Trunk Roads and Side Roads, the Company shall consult and comply with the requirements of:
  - (a) Transport Scotland Trunk Road and Bus Operation Directorate;
  - (b) Aberdeen City Council; and
  - (c) Aberdeenshire Council.as appropriate.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.
- (iv) The Company shall consult and comply with the requirements of:
  - (a) Transport Scotland Trunk Road and Bus Operations Directorate;
  - (b) Aberdeen City Council; and

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(c) Aberdeenshire Council.

as appropriate, with regard to maintaining existing sign information during construction of the New Works.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

- (v) The Company shall allow at least 12 weeks for the making and publication of any temporary amendments to the existing local authority traffic orders required as a part of the Design.
- (vi) The Company shall allow at least 9 months for the making and publication of any permanent amendments to the existing local authority traffic orders required as a part of the Design.
- (vii) Tourist facilities shall be signed from the Trunk Road in accordance with the Scottish Office Development Department Circular 27/1995 and the "Trunk Road and Motorway Tourist Sign Posting Policy" May 1998 published by Scottish Office Development Department.
- (viii) New traffic sign faces, poles and foundations shall be provided in the Design for all roads described in Table 1 of Schedule 19 of the Agreement.
- (ix) All permanent traffic sign faces shall be designed in accordance with BS EN 12899-1 and shall be constructed from microprismatic retroreflective material, in accordance with the requirements of BS 8408, with dew resistant coatings.
- (x) Traffic signs manufactured using a proprietary planking system shall not be permitted in the Design.
- (xi) The Design shall ensure that where traffic signs require to be illuminated as described in Column 2 of Schedule 17 of the Traffic Signs Regulations and General Directions 2002, they shall be either externally or internally illuminated, with the exception of traffic bollards which shall be internally illuminated where possible.
- (xii) All bollards and signs in the Design that shall require to be lit shall be switched via the road lighting system as described in Section 1.10 below. On Aberdeenshire Council Side Roads the luminaires shall be LED type.
- (xiii) "New Road Layout Ahead" signs shall be provided on all approaches to the New Works Site immediately prior to opening any roads to traffic as described in Table 1 of Schedule 19 of the Agreement.
- (xiv) The signs and associated posts shall be removed by the Company after six months following the issue of the appropriate Permit to Use or Third Party Road Completion Certificate, as appropriate.
- (xv) The signing Design shall include signs appropriate to cycle routes. Cycle markings shall also be required in the Design at appropriate locations on combined footway/cycle tracks.

The Company shall consult and comply with the requirements of:

- (a) Aberdeen City Council; and
- (b) Aberdeenshire Council.

as appropriate with regard to the signing and marking of cycle facilities.

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The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

- (xvi) The Design shall ensure that all signs within 50 metres of existing and/or proposed systems of road lighting shall be illuminated.
- (xvii) The Design shall ensure that chevron signing shall be provided at all roundabouts in addition to the requirements of 1.8.3 (iv).
- (xviii) The Company shall amend/replace all existing signs within and up to a distance of 100 metres beyond the New Works Site and where required as a result of comments made by the Road Safety Auditor to ensure their compliance with the new road layout, revision of the route numbers, and revision of the junction names and numbers.
- (xix) The Design shall include the provision of advance direction signing and “No Entry” signs to ensure that there is no confusion to Users between merge and diverge slip roads at junctions.
- (xx) Where the area and/or height of the sign face is such that determination of the required support size and spacing is out-with the scope of the nomograms in the Traffic Signs Manual, the support system shall be treated as a Structure with regard to its Design and to the requirement for provision of Design and Check Certificates in accordance with the Certification Procedure.
- (xxi) The power supply for illuminated traffic signs shall be procured, commissioned and provided by the Company for both Trunk Road signing and for Side Road signs.
- (xxii) Separate circuits shall be provided for the signs of Side Roads within the local authority boundaries for Side Roads and for Trunk Roads. The traffic signs Design shall ensure that power to signs and circuits are provided for signs and that any feeder pillars required are located within the relevant Scottish Ministers and local authority boundaries. The locations for the feeder pillars shall be selected to allow safe and easy access for future maintenance purposes.

The Company shall consult and comply with:

- (a) Transport Scotland
- (b) Aberdeen City Council; and
- (c) Aberdeenshire Council;

as appropriate with regard to the provision, location and lighting of traffic signs.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

- (xxiii) Existing signs on redundant stretches of road shall be relocated to the appropriate verge, where suitable, or replaced by new signs where required by the Design.
- (xxiv) The traffic sign Design shall ensure that all posts shall be hot-dipped galvanised as defined in BS EN 40-5 Annex A.
- (xxv) On Balmedie-Tipperty, as part of the Balmedie – Belhelvie cyclepath works, there are works required to Keir Farm Access as shown on drawing P246600/02/01/SK269 Rev B. Associated works include the provision of



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passing bays for vehicles, and appropriate road signs and markings. The existing underpass shall be coated in an anti-graffiti paint.

- (xxvi) On the Balmedie-Tipperty section, the Mill Road Realignment shall incorporate warning signs and road markings shown on drawing P246600/02/01/SK353.
- (xxvii) A "Pedestrians in road ahead" sign to diagram 544.1 of the Traffic Signs Regulations and General Directions 2002 shall be erected at a suitable location agreed with the Contracting Authority on Milltimber Brae Overbridge road, to indicate shared use of Station Road by vehicles and pedestrians.
- (xxviii) Right turn lane shall be provided at the entrance to Kippie Lodge from the A93 including road markings to diagram 1044 of the Traffic Signs Regulations and General Directions 2002, in accordance with the Joint Statement between Transport Scotland and Aberdeen Petroleum Club in relation to the Aberdeen Western Peripheral Route dated 14<sup>th</sup> November 2008.

#### 1.9.2 Scheme Information and Publicity Sign Boards

- (i) The Company shall provide and erect scheme information boards to the detail in Appendix 1/21 to Part 4 of these New Works Requirements.

The signs and associated posts shall be removed by the Company after six months following the issue of the appropriate Permit to Use.

- (ii) The Company shall provide and display information on twelve publicity boards at locations to be agreed by the Contracting Authority, pertaining to the scope of the works and their progress.

The Company shall provide and display information on not less than twelve existing community boards at locations to be agreed by the Contracting Authority, pertaining to the scope of the works and their progress. The progress information shall be updated on a monthly basis throughout the period for the construction of the New Works.

The publicity board shall consist of a weather tight board which shall be suitable for displaying a minimum of four A3 size pages.

The publicity board shall be removed upon the Final Completion.

- (iii) The exact location for the information and publicity boards shall be agreed by the Contracting Authority, but the publicity boards shall be situated on or adjacent to existing footways or their diversions to enable the public to read them in safety.

#### 1.9.3 Traffic Bollards

- (i) Internally illuminated bollards shall be provided on the approaching corners of splitter and deflection islands to highlight their presence for traffic entering and leaving illuminated junctions.

#### 1.9.4 Marker Posts

- (i) The Company shall consult and comply with the requirements of the Transport Scotland Trunk Road and Bus Operations with regard to the exact location of the new distance marker posts and the detail of the location information to be displayed on the new distance marker posts.

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## 1.9.5 Road Markings

- (i) The Design shall ensure that all road markings shall be 'extruded' thermoplastic material.
- (ii) Notwithstanding the other requirements of this Agreement, where kerbs shall be provided in the Design, continuous white edge lines shall also be provided, except at Roundabouts.
- (iii) Any transitions in the offsets of white lines to be provided on the roads described in Table 1 of Schedule 19 of the Agreement and existing carriageways shall be applied at a rate of 1:100.
- (iv) On the low side of carriageways, gaps shall be provided at adequate, regular intervals in the raised rib road markings for drainage purposes.
- (v) The Design shall ensure that all Side Road markings are replaced or remarked as appropriate throughout the period stated in Clause 12.1.5 when less than 70 per cent remains due to wear, or where the luminance factor shall be less than 45 per cent, as estimated by visual inspection or measurement.  
  
Notwithstanding the above requirement, replacement of worn or otherwise defective road markings shall be carried out when the criteria set out in TD 26 of the DMRB have been determined as being met or exceeded either by visual inspection or test.
- (vi) Notwithstanding the other requirements of this Agreement, the Design shall ensure that all Side Road road markings shall be renewed during the last 12 months of the period stated in Clause 12.1.5 by remarking with sprayed thermoplastic material.

## 1.9.6 Road Studs

- (i) The Company shall consult and comply with the requirements of:
  - (a) Aberdeen City Council; and
  - (b) Aberdeenshire Council;as appropriate with regard to the provision of road studs on Side Roads.  
  
The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.
- (ii) The Company shall consult and comply with the requirements of Transport Scotland Trunk Road and Bus Operations regarding the locations for the CHART node and section markers.  
  
The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.
- (iii) The Company shall provide the necessary CHART link and section node markers within the New Works to enable suitably co-ordinated Integrated Road Information System (IRIS) survey information to be recorded.

## 1.9.7 Traffic Signals

## 1.9.7.1 General

- (i) Traffic signals shall be provided at the following locations:
  - (a) A90 Stonehaven Junction

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- (i) All arms of the junction between the B979, Stonehaven Junction southbound diverge slip road and Stonehaven Junction southbound merge slip road.
  - (b) A956 Charleston Junction
    - (i) All arms of the junction between the A956, Charleston Junction northbound diverge slip road and Charleston Junction northbound merge slip road.
    - (ii) All arms of the junction between the A956, Charleston Junction southbound diverge slip road and Charleston Junction southbound merge slip road.
  - (c) A93/B979 (Milltimber) Junction
    - (i) All arms of the junction between the A93 and the B979
  - (d) A944 South Kingswells Junction
    - (i) NMU crossings of the South Kingswells Junction northbound merge slip road and the South Kingswells Junction southbound diverge slip road.
  - (e) A96 / Craibstone Junction
    - (i) All arms of the junction between the Craibstone Junction Link Road, Craibstone Junction northbound diverge slip road and Craibstone Junction northbound merge slip road.
    - (ii) All arms of the junction between the Craibstone Junction Link Road, Craibstone Junction southbound diverge slip road and Craibstone Junction southbound merge slip road.
    - (iii) All arms of the junction between the A96, Craibstone Junction Link Road and Kirkhill Industrial Estate Access Road.
    - (iv) All arms of the junction between the A96, Dyce Drive and Craibstone College Access Road.
  - (f) Goval Junction
    - (i) The junction between Goval (West) Roundabout to A947 Link Road (2) and the new A947 Aberdeen to Oldmeldrum to Turriff Road.
    - (ii) The junction between the new B977 Echt to Balmeddie Road (2), the new A947 Aberdeen to Oldmeldrum to Turriff Road and the new B977 Echt to Balmeddie Road (3).
  - (g) Blackdog Junction
    - (i) NMU crossings of the Blackdog Junction northbound diverge slip road, northbound merge slip road, southbound diverge slip road and southbound merge slip road.
  - (ii) In addition to the signal installations noted above, the Company shall provide sufficient ducts to permit future installation of traffic signals at other
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locations in a manner which shall not require carriageway excavation. The locations at which this provision shall be made are all junctions of trunk road main carriageway, and trunk road slip roads at which signal installations are not installed in compliance with paragraph 1.9.7.1 (i).

- (iii) The Company shall consult and comply with the requirements of
- (a) Aberdeen City Council;
  - (b) Aberdeenshire Council;
  - (c) The Scottish Ministers Trunk Road North East Management Unit;
  - (d) Transport Scotland.
- as appropriate with regards to the layout, installation and testing of:
- (a) traffic signals;
  - (b) pedestrian crossings; and
  - (c) combined pedestrian / cycle crossing installations.
- within their respective boundaries. The design requirements for traffic signals are provided in Appendix 12/5 to the Specification.
- The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.
- (iv) The Company shall consult with the parties listed in Section 1.9.7.1 to identify the traffic signal systems currently in use and to ensure that any traffic signal and Urban Traffic Control (“UTC”) or Outstation Monitoring Unit (“OMU”) equipment to be installed shall be compatible with these existing systems.
- (v) The Company shall design, supply, install and commission all traffic signal equipment, UTC and OMU equipment and related ancillary items. All traffic signal UTC and OMU equipment supplied by the Company shall be Urban Traffic Management and Control (“UTMC”) compatible.
- (vi) The Company shall be responsible for the provision of the power supply associated with the traffic signal equipment.
- (vii) Full requirements for the design of traffic signals are detailed in Appendix 12/5 to the Specification and the design shall include, but not be limited to, the following:-
- (a) Detailed drawings at 1:500 scale for each traffic signal controlled junction, signalised pedestrian crossing and signalised pedestrian / cycle crossing;
  - (b) TR2500A Configuration Forms; and
  - (c) MOVA Datasets (as applicable).
- (viii) The design shall provide pedestrian crossings and facilities for cyclists at traffic signal installations. Controlled crossings shall be designed (without limitation) in accordance with the Transport Scotland Disability Discrimination Act Good Practice Guide for Roads (Transport Scotland). Puffin crossings and toucan crossings shall be used.
- (ix) The design of traffic signal installations shall ensure integrated operation with the existing UTC, Remote Monitoring system(s) operated by the Scottish Ministers and the relevant local authorities, where applicable,

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within their respective boundaries. The design shall allow the equipment to be monitored remotely. The traffic signals shall be controlled using fixed-time plans, UTC / Split Cycle Offset Optimisation Technique (“SCOOT”) or MOVA based adaptive traffic control strategies to ensure that the traffic signals operate at their optimum efficiency and can adapt to changes in traffic demand and changes in operation that may be implemented. The Company shall consult and comply with Transport Scotland and the relevant local authority in this regard.

- (x) The Company shall prepare fixed time plans, SCOOT plans, MOVA Datasets, OMU Configurations and TR2500 forms to the satisfaction of the Contracting Authority. The Company shall configure accordingly within the UTC / SCOOT database or Remote Monitoring System (“RMS”).
- (xi) The Company shall undertake on-street validation and fine-tuning of the signals / systems to the satisfaction of the Contracting Authority. The Company shall provide appropriate certification, to the satisfaction of the Contracting Authority, recording the validation measurements and parameters used in the initial system configuration.
- (xii) The Company shall be responsible for setting up all MOVA, UTC / SCOOT system databases and their configuration to the satisfaction of the Contracting Authority. This shall include but not be limited to Outstation Transmission Unit (“OTU”) data, controller data, SCOOT network data, SCOOT link data, plan data, timetable data and MOVA data. All data shall be submitted to the Contracting Authority for approval prior to being configured in the respective systems. The Company shall provide Configuration Forms to the Contracting Authority at least 9 months prior to the Company’s proposed installation date to allow adequate time for the Contracting Authority to review the UTC system information accordingly.

#### 1.9.7.2 Below Ground Traffic Signal Equipment

- (i) The Company shall supply and install proprietary traffic signal pole retention sockets. The Company’s proposed pole retention system shall be subject to the approval of the Contracting Authority. Traffic Signal Poles shall be installed in a 360 degree cast iron swivel duct foot bend retention socket. Retention sockets shall be modular in construction and shall be manufactured from ductile iron to BS2789 500-7(GGG50-Din 1693). A bottom cable entry bend shall have a rotation through 360 degrees to permit cable access from any direction.
- (ii) The Company shall be responsible for the design of the detection system and the provision of all associated below ground detection equipment. Where inductance loops are used, the Company shall supply and install Carriageway Loop Boxes (CLB’s) and the detection loop feeder ducts. These ducts shall carry the loop feeder cables from the traffic controller cabinets to the appropriate chamber at the location of the traffic detection loops provided to facilitate the operation of the traffic signals. Loop feeder cables shall not be installed by slot cutting into the carriageway.

#### 1.9.7.3 Power Supply and Termination

- (i) The Company shall be responsible for the design, supply and installation of all the equipment cabinets required for the traffic signal equipment, including any related UTC, MOVA equipment, and their associated power supplies. The Company shall also arrange for the provision of an

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independent power supply to the electrical termination pillars to all traffic signal equipment with the Electricity Supply Company.

- (ii) The power termination pillars shall be located adjacent to the traffic signal controller cabinet and at the back of the footway. They shall be capable of remote isolation.

#### 1.9.7.4 Communications Supply

- (i) The Company shall design, supply and install the communications system and associated cabinetry for the traffic signal equipment and MOVA, UTC equipment. The Company shall consult and comply with Transport Scotland and the relevant local authority with regard to the proposed communications solution and compatibility with the existing systems' telecommunications.
- (ii) The Company shall liaise with the relevant Service Providers as necessary with regards to the provision of communications.
- (iii) Communications cabinets, if required, shall be located adjacent to the traffic signal controller cabinet at the heel of the footway where possible.

#### 1.9.8 Duct System

1.9.8.1 All cabling shall be fully ducted and provided with inspection chambers and pole retention sockets such that cable can be installed or removed. Drawn bends shall not be incorporated in the duct runs without the prior approval of the Contracting Authority. All carriageway crossings for traffic signal cables shall incorporate 100 millimetre internal diameter ducts and shall terminate to the inspection chambers, which shall be installed within adjacent footpaths or verges.

1.9.8.2 The Company shall design, supply and install the traffic signal duct network. Traffic signal ducting shall be provided in accordance with Appendix 12/5 to the Specification.

1.9.8.3 Where inductance loops are used, this shall include the supply and installation of detection loop feeder ducts to carry loop feeder cables from the traffic controller cabinets to an appropriate chamber, sited at the location of any traffic detection loops required for the operation of the traffic signals. Loop feeder cables shall be ducted and shall not be installed by slot cutting into the carriageway. Loop feeder cables may share any traffic signal ducting provided and with agreement, communication ducting, where there is a direct and continuous route.

1.9.8.4 Where electrical mains cable is to be installed, it shall be installed in separate ducting and not share traffic signal chambers.

1.9.8.5 All completed duct routes shall be tested by drawing through an appropriate mandrel. The Company shall supply a mandrel test certificate for each duct length prior to the commencement of cable installation. Following cable installation, a replacement draw cord shall be installed so that a serviceable cord is available at all times.

#### 1.9.8.6 Duct Access Chambers

- (i) The Company shall design, supply and install duct access chambers for the traffic signal ducts, the communication ducts, the power supply ducts and the loop feeder ducts. Traffic signal ducting shall be provided in accordance with Appendix 12/5 to the Specification. These access chambers shall be the appropriate size for the number of ducts / cables and also for the depth of installation of the ducts (i.e. road crossings shall

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- be a minimum of 600 millimetres by 600 millimetres due to the depth of the road crossing). The Company shall consult and comply with the requirements of the Transport Scotland and where appropriate, the relevant local authority in this regard.
- (ii) The Company shall ensure provision of duct access chambers for the relevant communication Service Provider's communication ducts. The Company shall liaise with the relevant communication Service Provider to arrange the installation of such chambers.
  - (iii) The design of the Works shall include access chambers at the following general locations:
    - (a) at every change in the horizontal and vertical direction of the ducts;
    - (b) at every junction of ducts;
    - (c) at every traffic signal controller;
    - (d) at the end of each duct run; and
    - (e) at each end of each road crossing
  - (iv) The chamber spacing shall be no greater than 40 metres in any direction.
  - (v) The use of combined access chambers for the traffic signals ducts, the communication ducts, and the power supply ducts shall not be permitted. Loop feeder ducts may use communications chambers and traffic signal chambers.
  - (vi) Ducts and duct access chambers employed to accommodate cabling for traffic signals and associated works shall not be employed for any other use. For the avoidance of doubt, this shall include lighting and the like.
  - (vii) Where the design requires new ducted cables within the existing footways, the Company shall where possible use existing duct chambers. The Company shall carefully break into the chamber making the minimum size of hole necessary to install the duct. The duct shall be bedded and the interior surfaces and exterior render made good using designation one mortar.
- 1.9.8.7 Above-ground traffic and pedestrian signal equipment, detection equipment, electrical equipment and associated items, and the communications Service Provider cabinets.
- (i) The Company shall supply, install and commission all above-ground traffic signal equipment, detection equipment, electrical equipment, isolation equipment and associated items, and the communications Service Provider cabinets required by the design.
  - (ii) Above-ground traffic signal equipment shall include, but not be limited to, poles, LED signal heads, LED pedestrian heads/nearside units, LED cyclist heads/ nearside units, push button equipment, tactile cone units and audible units.
  - (iii) Traffic detection shall include, but not be limited to, above-ground detectors, VA, SA, SDE, SCOOT / MOVA loop detection and hurry-call loop detection.

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- (iv) Electrical equipment and associated items shall include, but not be limited to, controllers, auxillary cabinets, electrical termination pillars, traffic signal cables, power supply cabling, communications cabling, etc.
- (v) The Company shall be responsible for all traffic management associated with the traffic signal works specified in this Section 1.9.7.

**1.9.8.8 Urban Traffic Control Equipment**

- (i) The Company shall supply, install and commission all UTC equipment including outstation transmission units, control units, adaptive control detection and communications equipment and other equipment required by the design.
- (ii) The Company shall allow for the communication equipment, configuration and testing as required for the traffic signal equipment linking to existing remote monitoring or UTC systems. The Company shall provide certification, to the satisfaction of the Contracting Authority, recording completed and successful test data to ensure the in-station and outstation data compatibility. This shall include the interface with the in-station system and the communications from the outstation to in-station equipment.
- (iii) UTC equipment shall include, but not be limited to, control system outstations, communications equipment, loop / above ground detection, feeder cable, loop / above ground sensors and detectors, and specialist detection equipment.
- (iv) Adaptive control systems shall be used to maximise the efficiency of the traffic signal operation.
- (v) The Company shall consult and comply with the requirements of the Transport Scotland with regard to the specification and type of Traffic Signal Controller to be procured.

**1.9.8.9 Traffic Signal Posts**

- (i) All traffic signal posts provided on New Slip Roads and Trunk Roads, shall be passively safe in accordance with Volume 2 part 2 TA 89/08 of the DMRB.
- (ii) Traffic signal posts on Local Authority Roads shall be passively safe unless otherwise agreed with the relevant local authority as part of the consult and comply process.

**1.10 Road Lighting, Electrical Works For Road Lighting and Intelligent Lighting Control System (ILCS)****1.10.1 General**

- (i) The Company shall be required to provide a lighting and electrical design which satisfies the requirements of this Section 1.10 of the New Works Requirements and the associated Specification referenced as Part 4 of the New Works Requirements.

The road lighting and electrical works designs shall provide for the alteration of any existing road lighting and electrical works together with provision of new road lighting and electrical works.



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The Company shall provide, install and commission lighting, electrical and ILCS systems in accordance with the design section 1.10 and the contract documents.

- (ii) The Company shall carry out an assessment of all new proposed lighting arrangements and alterations to existing lighting which shall appraise and detail the environmental, ecological, safety, reduced energy consumption and whole life cost of ownership. The preferred solution shall be based on the outcome of this appraisal. The report shall appraise and identify proposals for:

- (a) New Special Roads and New Trunk Roads; and  
 (b) Individual local authority roads including New Side Roads and New Roundabouts,

The Company shall consult and comply with:

- (a) Transport Scotland;  
 (b) Aberdeen City Council; and  
 (c) Aberdeenshire Council;

as appropriate with regard to the lighting design within the respective boundaries identified above.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

- (iii) New road lighting shall be provided as follows:
- (a) at the locations detailed in Table 2 and where Reference Points are prescribed, with reference to drawings B1033200/CD/REF//001-071.
- (b) to lighting levels in accordance with BS5489-1:2013 and BS EN 13201-2 as detailed in Table 2; and
- (c) responsible authority as detailed in Table 2

**Table 2 New Road Lighting**

| Road Description                   | Lighting classes to BS 5489-1, BS5489-2 & BS EN 13201-2 | Responsible Authority <sup>1</sup> |
|------------------------------------|---------------------------------------------------------|------------------------------------|
| New Stonehaven Roundabout          | CE3                                                     | The Company                        |
| New Stonehaven Junction            | CE2                                                     | The Company                        |
| A90 AWPR (Stonehaven to Cleanhill) | ME4a                                                    | The Company                        |
| B979 Netherley Road                | ME3b                                                    | ASC                                |
| B979 Netherley Road                | ME5                                                     | ASC                                |
| Megray Farm Access Road            | ME4a                                                    | ASC                                |

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| Road Description                                 | Lighting classes to BS 5489-1, BS5489-2 & BS EN 13201-2 | Responsible Authority <sup>1</sup> |
|--------------------------------------------------|---------------------------------------------------------|------------------------------------|
| Stonehaven Junction Northbound Diverge Slip Road | ME4a                                                    | TS TRBO                            |
| Stonehaven Junction Northbound Merge Slip Road   | ME4a                                                    | TS TRBO                            |
| Stonehaven Junction Southbound Merge Slip Road   | ME4a                                                    | TS TRBO                            |
| Stonehaven Junction Southbound Diverge Slip Road | ME4a                                                    | TS TRBO                            |
| Cleanhill Roundabout                             | CE4                                                     | The Company                        |
| A90 AWPR (Cleanhill to North Kingswell)          | ME4a                                                    | The Company                        |
| A956 AWPR (Cleanhill to Charleston)              | ME4a                                                    | The Company                        |
| A90 AWPR ,(Cleanhill to Stonehaven)              | ME4a                                                    | The Company                        |
| Milltimber Brae Overbridge                       | ME4a                                                    | ACC                                |
| New A93 North Deeside Road                       | ME3b                                                    | ACC                                |
| B979 Milltimber Brae Road                        | ME3b                                                    | ACC                                |
| B979 Milltimber Brae Road                        | ME3b                                                    | ACC                                |
| Milltimber Roundabout                            | CE2                                                     | ACC                                |
| Milltimber Junction Northbound Merge Slip Road   | ME3b                                                    | The Company                        |
| Milltimber Junction Northbound Diverge Slip Road | ME3b                                                    | The Company                        |
| Milltimber Junction Southbound Merge Slip Road   | ME3b                                                    | The Company                        |
| Milltimber Junction Southbound Diverge Slip Road | ME3b                                                    | The Company                        |
| South Kingswell Roundabout                       | CE2                                                     | ACC                                |
| A944 Aberdeen to Alford to Strathdon Road        | ME3b                                                    | ACC                                |
| A944 Aberdeen to Alford to Strathdon Road        | ME3b                                                    | ACC                                |

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| <b>Road Description</b>                                | <b>Lighting classes to BS 5489-1, BS5489-2 &amp; BS EN 13201-2</b> | <b>Responsible Authority<sup>1</sup></b> |
|--------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------|
| Kingsford to Gairnlea road                             | ME4a                                                               | ACC                                      |
| C93C Clintery to Kingsford Road                        | ME4a                                                               | ACC                                      |
| South Kingswells Junction Northbound Diverge Slip Road | ME4a                                                               | The Company                              |
| South Kingswells Junction Southbound Merge Slip Road   | ME4a                                                               | The Company                              |
| South Kingswells Junction Southbound Diverge Slip Road | ME4a                                                               | The Company                              |
| South Kingswells Junction Northbound Merge Slip Road   | ME4a                                                               | The Company                              |
| Dykeside Roundabout                                    | CE4                                                                | ACC                                      |
| C89C Chapel of Stoneywood to Fairley Road              | ME4a                                                               | ACC                                      |
| C89C Chapel of Stoneywood to Fairley Road              | ME4a                                                               | ACC                                      |
| North Kingswells Junction Link Road                    | ME4a                                                               | ACC                                      |
| North Kingswells Junction Link Road                    | CE3                                                                | ACC                                      |
| North Kingswells Junction Northbound Merge Slip Road   | ME4a                                                               | The Company                              |
| North Kingswells Junction Southbound Diverge Slip Road | ME4a                                                               | The Company                              |
| Craibstone Junction Southbound Merge Slip Road         | ME3b                                                               | The Company                              |
| Craibstone Junction Northbound Diverge Slip Road       | ME3b                                                               | The Company                              |
| Craibstone Junction                                    | CE2                                                                | ACC                                      |
| Craibstone Junction Southbound Diverge Slip Road       | ME4a                                                               | The Company                              |
| Craibstone Junction Northbound Merge Slip Road         | ME4a                                                               | The Company                              |
| New A96 Craibstone Junction Link Road                  | ME3b                                                               | The Company                              |

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| Road Description                               | Lighting classes to BS 5489-1, BS5489-2 & BS EN 13201-2 | Responsible Authority <sup>1</sup> |
|------------------------------------------------|---------------------------------------------------------|------------------------------------|
| A96 Aberdeen to Inverness Road Westbound       | ME3b                                                    | TS TRBO                            |
| A96 New Craibstone Junction Roundabout         | CE2                                                     | The Company                        |
| Kirkhill Industrial Estate Link Road           | ME3b                                                    | ACC                                |
| New A96 Aberdeen to Inverness Road             | ME3b                                                    | ACC                                |
| Dyce Drive                                     | ME3b                                                    | ACC                                |
| Craibstone College Access Road                 | ME4a                                                    | ACC                                |
| New A947Aberdeen to Oldmeldrum to Turriff Road | ME4a                                                    | ASC                                |
| New A947Aberdeen to Oldmeldrum to Turriff Road | ME4b                                                    | ASC                                |
| New B977 Echt to Balmedie Road                 | ME3b                                                    | ASC                                |
| New B977 Echt to Balmedie Road                 | ME4a                                                    | ASC                                |
| New B977 Echt to Balmedie Slip Road            | ME4a                                                    | ASC                                |
| New B977 Echt to Balmedie Road                 | ME4a                                                    | ASC                                |
| Goval Junction Southbound Diverge Slip Road    | ME4a                                                    | The Company                        |
| Goval Junction Southbound Merge Slip Road      | ME4a                                                    | The Company                        |
| Goval Junction Northbound Diverge Slip Road    | ME4a                                                    | The Company                        |
| Goval West Roundabout to A947 Link Road        | ME4a                                                    | ASC                                |
| Goval Junction Northbound Merge Slip Road      | ME4a                                                    | The Company                        |
| Goval Farm Cottages Access Road                | CE3                                                     | ACC                                |
| Goval West Roundabout                          | CE3                                                     | ACC                                |
| Goval East Roundabout                          | CE2                                                     | ACC                                |
| Blackdog roundabout                            | CE2                                                     | The Company                        |

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| Road Description                                     | Lighting classes to BS 5489-1, BS5489-2 & BS EN 13201-2                       | Responsible Authority <sup>1</sup> |
|------------------------------------------------------|-------------------------------------------------------------------------------|------------------------------------|
| Blackdog Access Road                                 | ME4a                                                                          | ASC                                |
| Tarbothill Landfill Access Road                      | ME4a                                                                          | ACC                                |
| Blackdog Industrial Estate Access Road               | ME4a                                                                          | ASC                                |
| Blackdog Junction Southbound Diverge Slip Road       | ME3b                                                                          | The Company                        |
| New Blackdog Junction Southbound Merge Slip Road     | ME4a                                                                          | ASC                                |
| New Blackdog Junction Northbound Diverge Slip Road   | ME4a                                                                          | ACC                                |
| New C1C Belhelvie to Waterridgemuir Road             | ME4a                                                                          | ACC                                |
| A90 AWPR Southbound (Blackdog to Goval)              | ME4a                                                                          | The Company                        |
| Charleston Junction Northbound Diverge Slip Road     | ME3b                                                                          | The Company                        |
| Charleston Junction Southbound Merge Slip Road       | ME3b                                                                          | The Company                        |
| New Charleston Junction Northbound Merge Slip Road   | ME4a                                                                          | ACC                                |
| New Charleston Junction Southbound Diverge Slip Road | ME4a                                                                          | ACC                                |
| New A956 Wellington Road                             | ME3b                                                                          | ACC                                |
| A956 Charleston Junction                             | CE2                                                                           | The Company                        |
| A956 AWPR (Cleanhill to Charleston)                  | ME4a                                                                          | The Company                        |
| A90 Main dual carriageway                            | ME2                                                                           | The Company                        |
| Old Stonehaven Road Cycle Track                      | S3                                                                            | ASC                                |
| Allochie Underpass                                   | Day-time and night-time lighting is required in accordance with BS5489-2:2003 | The Company                        |

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| Road Description                                  | Lighting classes to BS 5489-1, BS5489-2 & BS EN 13201-2                                    | Responsible Authority <sup>1</sup> |
|---------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------|
| Kingcausie and Eastland Underpass                 | Day-time and night-time lighting is required in accordance with BS5489-2:2003              | The Company                        |
| Blaikiewell Road (U63K) Underpass                 | Day-time and night-time lighting is required in accordance with BS5489-2:2003              | The Company                        |
| Beanshill underpass                               | Day-time and night-time lighting is required in accordance with BS5489-2:2003              | The Company                        |
| Gairn Farm Underpass                              | Day-time and night-time lighting is required in accordance with BS5489-2:2003              | The Company                        |
| Coneyhatch (U89K) NMU underpass                   | Day-time and night-time lighting is required in accordance with BS5489-1:2013              | AWPR                               |
| A947 Formartine and Buchan Way under bridge       | Day-time and night-time lighting is required in accordance with BS5489-2:2013              | AWPR                               |
| Formartine and Buchan Way underpass               | Day-time and night-time lighting is required in accordance with BS5489-1:2013              | AWPR                               |
| Shell Pipe Protection Structure and NMU underpass | Day-time and night-time lighting is required in accordance with BS5489-1:2013              | AWPR                               |
| North Kingswell Junction Underbridge              | Nigh-time lighting only. Levels to be as per road lighting class for this road noted above | ACC                                |

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| Road Description                          | Lighting classes to BS 5489-1, BS5489-2 & BS EN 13201-2                                    | Responsible Authority <sup>1</sup> |
|-------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------|
| A96 Junction Underbridge                  | Nigh-time lighting only. Levels to be as per road lighting class for this road noted above | TS TRBO                            |
| A944 south kingswells north underbridge   | Nigh-time lighting only. Levels to be as per road lighting class for this road noted above | ACC                                |
| C127c Silverburn road underbridge         | Nigh-time lighting only. Levels to be as per road lighting class for this road noted above | ACC                                |
| Charleston junction overbridge            | Nigh-time lighting only. Levels to be as per road lighting class for this road noted above | ACC                                |
| Meadowhead Cottage Underbridge            | Nigh-time lighting only. Levels to be as per road lighting class for this road noted above | ASC                                |
| Stranog underbridge (C5K)                 | Nigh-time lighting only. Levels to be as per road lighting class for this road noted above | ACC                                |
| New Balmedie West Roundabout              | CE3                                                                                        | ASC                                |
| New Balmedie East Roundabout              | CE3                                                                                        | ASC                                |
| B977 Realignment                          | ME4a                                                                                       | ASC                                |
| A90 Northbound Merge / Diverge            | CE4                                                                                        | The Company                        |
| Millden Access                            | ME4a                                                                                       | ASC                                |
| Balmedie Underpass & Roundabout Link Road | CE3                                                                                        | ASC                                |
| Old Road                                  | ME4a                                                                                       | ASC                                |
| Elgie Road                                | ME4a                                                                                       | ASC                                |
| A90 Southbound Merge / Diverge            | CE4                                                                                        | The Company                        |

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| Road Description                            | Lighting classes to BS 5489-1, BS5489-2 & BS EN 13201-2 | Responsible Authority <sup>1</sup> |
|---------------------------------------------|---------------------------------------------------------|------------------------------------|
| New Tippetty Roundabout                     | CE3                                                     | ASC                                |
| A90 Realignment                             | ME4a                                                    | ASC                                |
| B9000 West Realignment                      | ME4a                                                    | The Company                        |
| A90 Northbound Merge                        | ME4a                                                    | ASC                                |
| Tippetty Underpass & B9000 East Realignment | ME4a                                                    | ASC                                |
| A90 Southbound Diverge                      | ME4a                                                    | The Company                        |
| New Balmedie West Roundabout                | CE3                                                     | ASC                                |
| New Balmedie East Roundabout                | CE3                                                     | ASC                                |

Note 1 to Table 2:

TS TRBO = operated by Transport Scotland Trunk Road and Bus Operations

ACC = Aberdeen City Council operated

ASC = Aberdeenshire Council operated

The Company = The Company operated

- (iv) The Company shall interface the new lighting installation with the existing lighting and shall consult and comply with the requirements of the relevant road authorities as required to agree the level of provision of new lighting columns at and around the interface reference points.
- (v) The Company shall consult and comply with the requirements of the following bodies regarding all aspects of lighting design and approvals, including those sections of existing lighting that the Company proposes to incorporate into the New Works:
  - (a) for the Special Road and Trunk Road lighting design, Transport Scotland;
  - (b) for Side Road lighting Design:
    - (i) Aberdeen City Council; and
    - (ii) Aberdeenshire Council
 as appropriate, within their respective boundaries.
- (vi) The Company shall be responsible for the design, provision, management and installation of the permanent power supply, feeder pillars, chambers, columns and the like for all road and pedestrian lighting as well as trenching and laying of ducts.
- (vii) The Company shall liaise with the Electricity Supply Company regarding the provision of power supplies, the upgrading of existing power supplies



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and requirements for their provision. For Trunk Roads, the electricity Supplies to roadside electrical assets and lighting shall be in accordance with LDS8006. For Side Roads, the Company shall consult and comply with the Local Authorities regarding their specific requirements.

- (viii) Road lighting and electrical works shall be in accordance with the latest DMRB TD 34, including provision of permanent power supplies at locations to be agreed in consultation with the following:
  - (a) for Special Road and Trunk Road lighting Design, Transport Scotland;
  - (b) for local authority road lighting Design:
    - (i) Aberdeen City Council; and
    - (ii) Aberdeenshire Councilas appropriate, within their respective boundaries.
- (ix) The road lighting and electrical works Design shall provide for the alteration of any existing road lighting and electrical works together with provision of new road lighting and electrical works.
- (x) The lighting Design for new lighting installations shall comply with the following criteria:
  - (a) design factors relative to the loading of lighting columns shall be applied in accordance with BSEN 40-6: 2002;
  - (b) a cleaning interval of five years shall be assumed to coincide with maintenance requirements and electrical testing (lamp replacement, etc.) for LED light sources and luminaires;
  - (c) for all lighting columns, a Terrain Category of Class one shall be applied in accordance with BSEN 40-3-1:2000; and
  - (d) luminaires shall be IP66 rated with lighting outputs in compliance with BSEN 13201-2 Table 1a, Table 2, Table 3 and Table A.1 or any specific requirements.
- (xi) Building Information Modelling (BIM) Level 2 to be incorporated as part of the design process.

#### 1.10.2 Columns, Brackets & Lanterns

- (i) Unless protected by a Vehicle Restraint System (VRS) lighting columns shall be designated Passive Safe or otherwise located so as to require no protection in accordance with the latest TD 19 of the DMRB unless agreed otherwise with the Contracting Authority. Where passively safe columns are used they shall conform to the requirements of BS EN12767 in terms of passive classification and electrical disconnection. For all new installations lighting columns, whether passively safe or not, shall be continuous taper and be manufactured from aluminium.

The column root shall be protected by an inner and outer polymer thermally bonded sheath to a height of 250mm above the finished ground level.
- (ii) Typical column mounting heights are as follows:
  - (a) 12m for Special and Trunk Roads
  - (b) 10m or 12m for Side Roads excluding residential accesses

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- (c) 8m for residential access type roads
- (iii) All lighting columns that are not passively safe shall be manufactured from aluminium in accordance with the requirements of BS EN 40. Where columns are designed as passively safe the columns shall be designed and constructed from aluminium in accordance with BS EN 12767.
- (iv) All columns shall have a non-hygroscopic back-board, not less than 15mm thick and of a sufficient size to accept the selected cut-out, positioned in the base compartment opposite the access door. The back-board shall be securely fixed to the inside of the column. All fixings used for the attachment of equipment and components to this back-board shall be of stainless steel.
- (v) Lighting column access doors shall be retained by stainless steel chain or braided stainless steel wire. Such retaining chain or wire shall be compatible with the column material and be held captive by fixings similarly manufactured from compatible material. Chains shall be a minimum gauge of four millimetres and be long enough to allow the column access door to be rested completely on the ground whilst removed.
- (vi) All removable access doors shall be interchangeable with access doors of similar columns without the need for adjustment.
- (vii) Lighting columns and access doors shall be permanently earth bonded, via an earth link cable of the flexible braid type, and secured to brass earthing terminals fitted on both the column and its access door. The terminations shall be distinctly and durably marked with a metal label bearing the wording "Safety Electrical Connection – Do Not Remove".
- (viii) The column cable entry slot, which shall be positioned on the face to the right of the column access door opening, shall have minimum dimensions of 150mm by 75mm with the lower edge of the slot 600mm below ground level. The cable entry slot shall be free from irregularities and burrs.
- (ix) Each column shall be fitted with an eight millimetre (minimum) diameter earth terminal complete with two plain washers, one full nut and one locking nut. These items shall be corrosion resistant and compatible with the column material. Earth terminals shall be readily accessible through the door opening and located such as to minimise the risk of injury to persons accessing them while undertaking installation and maintenance.
- (x) All verge located lighting columns shall be installed such that the door is facing away from the oncoming traffic allowing maintenance personnel to access the door while facing the traffic.
- (xi) The flush fitting weatherproof single access door shall provide protection no less than IP33 and shall be free from any irregularities, burrs or sharp edges likely to cause injury. Unless specifically required by the Agreement each column access door shall have two locks using a triangular type key. The number of column door keys which shall be supplied shall be ten per cent of the number of columns erected subject to a minimum of three keys. All column access door keys shall be manufactured from metal and be of an adequate size for physical handling.
- (xii) On completion of the installation, all door locking components shall be coated with an application of suitable corrosion inhibitor grease providing lubrication and protection from seizure and general deterioration.

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- (xiii) New lighting column base compartment, cableways and compartment doors shall comply with the requirements of BS 5649 part 5.
- (xiv) On Trunk Roads lighting columns shall be provided with integral bracket arms with an outreach no greater than 0.5m, except for at A90 Stonehaven Junction between reference points B10-B09 where the bracket outreach shall be no greater than 2m, lanterns to have an inclination of zero degrees and to be kept horizontal irrespective of bracket inclination, unless otherwise agreed with the Contracting Authority. All brackets shall have a five degree inclination.
- (xv) On Side Roads lighting columns shall not have bracket arms.
- (xvi) Lighting columns shall be root mounted except where mounted on structures or where the ground conditions do not allow the full column installation depth as detailed by the manufacturers data sheets to be achieved. Where root mounted columns cannot be used, the Company shall consult and comply with the Contracting Authority to develop an alternative arrangement.
- (xvii) Where columns are mounted on structures and behind parapets, the access doors shall be positioned such that the access opening is fully accessible above the upper height of the protective parapet and facing the maintenance personnel.
- (xviii) Where Flange plate columns are required they shall be set vertical on the foundation bases prepared for them. To ensure the column is set vertical compatible metal shims shall be used if required. Once the tightening of the nuts and exposed bolts has been completed to the torque level specified in the Design they shall be coated with protective paste and tape. All fixings shall be compatible with the column material.
- (xix) Where the column flange is not in accordance with BS EN 40-2 the Company shall liaise with the Contracting Authority and agree details of the flange sizes and fixing centres. The Company shall implement a design based upon the agreed flange fixing and provide the design to the column manufacturer.
- (xx) Where wall brackets and associated service boxes are installed they shall, where applicable, match existing items.

### 1.10.3 Luminaires

- (i) Unless otherwise agreed with the Contracting Authority, the Designs of the New Works shall utilise LED luminaires. The lighting design of the New Works shall have a minimum G4 Glare Classification.
- (ii) All luminaires shall be supplied with electronic LED drivers rated up to and including 52 klm and shall be suitable for operation over the input voltage range of 210-250 volts. Electronic LED drivers shall incorporate over-temperature protection and have a power factor of 0.99 or greater. Prior to delivery of any luminaire using electronic LED driver, the Company shall provide the Contracting Authority with a statement of compatibility from the supplier, detailing and confirming that the electronic LED driver being supplied is capable of operating over the temperature and voltage range to which it will be exposed in use within the luminaire housing and that the lamp and electronic LED driver are fully compatible with each other.

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- (iii) All combinations of luminaires, lamps and electronic LED drivers , shall be included in Elexon's list of approved equipment and be allocated a valid Unmetered Supplies ("UMS") charge code and should be CE marked.
- (iv) LED lanterns to be provided with a manufacturer backed long term guarantee of at least 20 years that will be transferred by novation to the relevant road authority on transfer of maintenance responsibility for the lanterns concerned. Such guarantee shall be based on a free issue replacement luminaires by the manufacturer based on L80, F10 of 80,000 hours.
- (v) All luminaires shall be supplied as compatible with the relevant road authority's Intelligent Lighting Control System ("ILCS") without impact upon either the luminaire or ILCS manufacturer's guarantee.
- (vi) All new luminaires shall have an Ingress Protection rating of no less than IP 66 for the Electronic LED driver and lamp compartments. All luminaire glazing shall be manufactured from Toughened Glass.
- (vii) Lamp to be typically Light Emitting Diode (LED) for all luminaires including illuminated signs and bollards. LED colour temperature to be no greater than 4000K.
- (viii) All LED type luminaires shall be installed such that they are horizontal;
- (ix) Non-Motorised User (NMU) underpass lighting control to be angled so that it does not detect small mammals entering the underpass.

## 1.10.4 Feeder Pillars

- (i) Dedicated separate feeder pillars shall be provided for the lighting of roads operated and maintained by The Company, roads operated and maintained by Aberdeen City Council, roads operated and maintained by Aberdeenshire Council and roads operated and maintained by Transport Scotland TRBO.
- (ii) The feeder pillars and circuits for lighting installations shall be located within the boundaries of the relevant authority.
- (iii) The locations of the feeder pillars shall allow safe and easy access for future maintenance. A person access hard standing area shall be allowed for in front of the feeder pillar to facilitate ease of maintenance.
- (iv) The feeder pillars shall have a 'typical' cabinet specification as defined in Specification referenced as Part 4 of the New Works Requirements. The Company shall consult and comply with the relevant road authority to develop the feeder pillar arrangement.
- (v) The Company shall arrange for all Distribution Network Operator (DNO) electrical supply connection works to be undertaken. Where the Company needs to organise a new / transfer of an existing DNO connection then the individual metering requirements are to be clarified in advance of the ordering of works.
- (vi) The Company shall consult and comply with all requirements of the relevant road authority in terms of the equipment to be installed and construction methods utilised in advance of undertaking their detailed design selection and extents evaluation and ensure that their design and supporting documentation and calculations meet with the requirements of the relevant road authority. Following completion of the Works, Operating

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and Maintenance documents including as-built drawings, compliance test records and electrical tests and completions certificates shall be forwarded to the relevant road authority prior to the road lighting and associated electrical Works being accepted.

- (vii) Should distribution equipment within a feeder pillar be made live prior to the lighting installation being made live, a suitable 'Permit to Work' system shall be put in place to ensure that all recommended safety precautions are adhered to and hazards identified.
- (viii) Single phase supplies shall be utilised unless otherwise agreed in writing with the relevant road authority. Where a three phase supply to feeder pillars has been provided by the DNO, the individual outgoing distribution circuits via the electrical switchgear shall be single phase.
- (ix) All electrical works for new installations shall comply with IET Wiring Regulations 17th Edition: BS 7671:2008 Incorporating all amendments and updates, and the Electricity at Work Regulations 1989.
- (x) The electrical installation shall be tested in accordance with IET Wiring Regulations 17th Edition: BS 7671:2008 Incorporating all amendments and updates, and copies of the completed certificates shall be forwarded to the relevant road authority within seven working days of the tests being undertaken.

## 1.10.5 Wiring

- (i) All new road lighting installations shall be wired in XLPE or MDPE / PVC / SWA / PVC cables. The size of cable shall be either 16mm sq.3 core or 25mm sq. 3 core.
- (ii) All new traffic signs and bollard installations shall be wired in XLPE or MDPE / PVC / SWA / PVC cables. The minimum size of cable shall be 10mm sq.3 core.
- (iii) Longitudinal distribution (from feeder pillar to feeder pillar connections) cables shall be a minimum core size of 25mm<sup>2</sup>.
- (iv) The cable shall have BASEC or HAR approval in all respects other than the oversheath colour which shall be purple for all parties.
- (v) The electrical supply to the luminaire shall be via a 2.5mm sq. 3 core Blue Arctic Grade flexible cable.
- (vi) Cables shall not be subjected to an internal bending radius of less than 12 times the external diameter of the cable or less than the radius recommended by the manufacturer, whichever is greater.
- (vii) All cable sheathing shall be Chlorine Free.

## 1.10.6 Earthing

- (i) An earth rod shall be installed at each control pillar, complete with rod, inspection pit and cover. The connection between the earth rod and the pillar shall be made with an earth cable of no less than 16 mm<sup>2</sup> in diameter with resistance to ground of 20 ohms or less.
- (ii) An earth rod shall be connected to the last or penultimate column for each circuit.

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- (iii) The designer shall fully address issues in relation to the risks associated with simultaneous touch of adjacent conductive parts which are fed from different supplies throughout a distributed electrical installation. Supplementary bonding shall be in accordance with BS7671: 2008 including updates Regulation 542.1.3.3.

## 1.10.7 Ducting and Cabling

- (i) All new road lighting cabling for supply to lighting columns shall be installed in not less than two purple UPVC walled high density polypropylene with smooth bore of 100 millimetres internal diameter to BS EN 50086-2-4 on Local Authority roads and 150mm diameter millimetres to BS EN 50086-2-4 on the Trunk Road network. All ducts will be imprinted with the words "STREET LIGHTING" at intervals of not more than one metre throughout their length.
- (ii) The ducting shall be laid in such a manner to:
  - (a) Prevent the cable from being subjected to the bending radius described in C.1.10.5(iv).
  - (b) Prevent the duct alignment, where it differs from the trench, from exceeding a 1:30 transition from the vertical or horizontal.
- (iii) All new road crossings for lighting cables shall consist of not less than four UPVC walled high density polypropylene ducts. The ducts shall have a minimum cover of 750mm and shall be protected by a concrete surround of mix ST2 concrete to BS8500-2. All ducts shall be smooth bore, 100mm internal diameter on the local authority roads and 150mm diameter on the Trunk Road network to BS EN 50086-2-4 to facilitate the crossing of the carriageway. The purple ducts shall be imprinted with the words "STREET LIGHTING" at intervals of not more than one metre throughout their length.
- (iv) Cable ducts in the verge or central reserve shall consist of not less than two ducts and shall be HDPE with smooth bore of 100 millimetre internal diameter to BS EN 50086-2-4 on Local Authority and 150mm diameter to BS EN 50086-2-4 on Trunk Roads, purple in colour and imprinted with the words "STREET LIGHTING" at intervals of not more than one metre throughout their length. A minimum cover of 650 millimetres shall be provided.
- (v) Metallic trace marker tape shall be laid above the duct to permit cable detection by electronic route tracing equipment. This shall be yellow, self-coloured polyethylene tape for cable marking shall be laid approximately 250 mm above any duct carrying electrical supply/distribution cable. The tape shall be not less than 0.1 mm thick and 150 mm wide with the wording "Street Lighting Cables Below" printed in black along the full length so as to occupy not less than 75% of its available length and occurring at least at 1m intervals. Where several street lighting ducts are laid in one trench, only one line of marker tape need to be installed.
- (vi) Ducts shall be impervious to water, capable of being laid in temperature down to -10 degrees Celsius and be sufficiently flexible to follow undulation in a trench bottom.
- (vii) At least 75mm clearance shall be given between the cable duct and the sides of the trench and between ducts sharing the same trench.

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- (viii) Unless agreed otherwise with the Contracting Authority, at least 500mm clearance shall be given between cable ducts and services pipes belonging to Statutory Undertakers. The Company shall consult and comply with the relevant road authorities regarding their specific requirements.
- (ix) Trenches in verges and trenches crossing below the carriageways shall be 600mm wide and not more than 1.5m deep for the laying of ducts.
- (x) All ducting shall be Chlorine Free polyethylene.
- (xi) 1000mm by 1000mm distribution chambers shall be used at Special Road and Trunk Road crossings with a distribution chamber located in each verge with a minimum of four ducts 150mm minimum internal diameter ducts running between chambers. Chambers shall be covered with extra heavy duty covers.
- (xii) 450mm by 450mm distribution chambers shall be used at non-Special Road and non-Trunk Road crossings with a distribution chamber located in each verge with a minimum of four 100mm minimum internal diameter ducts running between chambers. Chambers shall be covered with heavy duty covers.
- (xiii) The location of all distribution chambers and ducts shall be recorded on as-built drawings with an accuracy of +/-100mm. Location measurements shall be taken from the nearest edge of the carriageway or fence line. Offsets of ducts shall be recorded at 20m intervals along their line. Offsets shall be defined longitudinally by distance from a permanent highway feature i.e. a marker post or other suitable feature. The Company shall record and store in a format compatible with Transport Scotland's Asset Management System (IRIS).
- (xiv) Under no circumstances shall cables enter a column, post, bollard or pillar base without the protection of ducting. Such ducts shall continue into the base and terminate at a suitable height to allow a seal to be formed using expanding foam sealant or similar.

## 1.10.8 Illuminated Signs and Bollards

- (i) The lighting design of the New Works shall include for the energising and illumination of relevant illuminated signs and bollards.
- (ii) All new lit bollards shall be internally illuminated by LEDs with a cast aluminium base lit arrangement and a minimum Ingress Protection rating of IP67, in accordance with BS EN 12899.
- (iii) All bollard external fastenings shall be manufactured from stainless steel.
- (iv) Signing within 50m of a lighting column that requires to be illuminated shall have a mean luminance in accordance with the requirements of BS EN 12899. Illuminated Traffic Sign luminaires shall use LED type lanterns complete with associated electronic LED drivers.
- (v) All signs and bollards that require to be illuminated shall be switched via the Intelligent Lighting Control System (ILCS).

## 1.10.9 Cut-outs

- (i) All street lighting and sign column cut-outs shall comply with BS7654.

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- (ii) All single phase road lighting cut-outs shall be double-pole ensuring both phase and neutral are broken by the removal of the fuse carrier. An earth terminal shall be provided within the cut-out enclosure. The continuity of the earth path shall not be broken by the removal of the cut-out fuse carrier.
- (iii) The cut-out gland plates shall be an integral part of the cut-out and be capable of terminating XLPE or MDPE / PVC / SWA / PVC cables up to 25 mm<sup>2</sup> and have the capacity for looping in-out. The brass gland plate shall typically accommodate up to three cables. Additional armoured cable termination, cut-out capacity and isolation devices shall be provided at multi-headed columns and at locations where spur supplies are provided.

## 1.10.10 Joints

- (i) All electrical and similar joints made onto the column structural aluminium and column access door shall be such as to eliminate or protect against corrosion resulting from contact between dissimilar metals. The Company shall adhere to such aspects of the guidance provided in PD6484 as it relates to dissimilar metals in contact with aluminium. The selection of electrical earthing components shall also comply in this and other respects with the requirements of BS 7430.
- (ii) Underground cable joints shall not be permitted for cables supplying road lighting. Lighting installations shall be designed to employ a loop in - out arrangement without joints. The Company shall repair damaged cables by replacing the full length of the damaged cable.

## 1.10.11 Labelling

- (i) In compliance with the DMRB, Transport Scotland operates a lighting inventory system. For newly installed equipment the Company shall provide all information in an agreed electronic format, in accordance with the table of attributes contained within Transport Scotland Trunk Road Inspection and Inventory Manuals as required to correctly populate the inventory system. Identification labels shall be attached to all pillars, columns, signs and similar electrically energised roadside assets. For Trunk Roads, the identification labels shall be in accordance with document LDS 8001. For Special Roads the identification labels shall be vinyl, 45mm x 60mm, black on white, with a 50mm letter/number, the font is Swiss 721 BT (bold) and these labels shall be affixed facing the road at 2.5m. The numbering schedule will be provided based on "as built". The numbering used on such labels shall identify the assets in the inventory and similar collected information. The Company shall consult and comply with Transport Scotland regarding the agreed format for the collected information. The Company shall consult and comply with the Local Authorities regarding their labelling requirements.

## 1.10.12 Temporary Lighting

- (i) Temporary lighting may be required at any part of the New Works Site where works shall be undertaken. All temporary lighting shall be provided in accordance with the applicable standards. The installation of temporary lighting shall comply with the relevant Acts and Regulations – for example (without limitation), the Electricity at Work Regulations 1989 and IET Wiring Regulations 17th Edition: BS 7671:2008 incorporating amendments and



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updates. It shall not form a hazard to Users. No existing street lighting shall be disconnected until it has been replaced by either the new permanent lighting arrangement or a temporary lighting system provided to the satisfaction of the Contracting Authority. The temporary lighting shall remain operational until the new permanent lighting arrangement is brought into use. Temporary lighting arrangements shall require the approval of the Contracting Authority prior to the commencement of works in the affected area.

## 1.10.13 Lighting Design Documents

- (i) A non-exhaustive list of relevant design documents in respect of the Works includes:
- (a) Electricity at Work Regulations 1989;
  - (b) Electricity Safety, Quality and Continuity Regulations 2002 (amended 2006,2009);
  - (c) Waste Electronic and Electrical Equipment (amendment) Regulations 2006;
  - (d) Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2008;
  - (e) IET Wiring Regulations 17th Edition: BS 7671:2008 incorporating amendments and updates (f) BS 7430: Code of practice for earthing;
  - (f) BS 7430: Code of practice for earthing
  - (g) BS EN 50110 Part one & 2: Operation of Electrical Installations;
  - (h) HSE Publication HSR25: Memorandum of Guidance on the Electricity at Work Regulations 1989;
  - (i) HSE Publication GS6: Avoidance of Danger from Overhead Electric Lines;
  - (j) HSE Publication HSG85: Electricity at Work – Safe Working Practices;
  - (k) HSE Publication HSG47: Avoiding danger from underground service;
  - (l) Institution of Lighting Engineers (ILE) Code of Practice for Electrical Safety in Highway Electrical operations;
  - (m) Energy Networks Association (ENA) Engineering Recommendation G39/1: Model Code of Practice, covering electrical safety in the planning, installation, commissioning and maintenance of public lighting and other street furniture;
  - (n) ENA Technical Specification 43-8: Overhead Line Clearances;
  - (o) County Surveyors' Society (CSS) Publication: Guidance Notes on Electrical Safety on the Highway to Achieve Compliance with the Electricity at Work Regulations, 1995;
  - (p) CSS Publication: Code of Practice for the Installation and Operation of Seasonal Decorations on or above the Public Highway, 1995;

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- (q) National Joint Utilities Group (NJUG) Publication 1: Recommendations on the avoidance of danger from underground electricity cables;
- (r) NJUG Publication 3: Cable Locating Devices; and
- (s) Well Lit Highways. Code of Practice for Highway Lighting Management.
- (t) Scottish Government guidance note "Controlling Light Pollution And Reducing Lighting Energy Consumption"

## 1.10.14 Intelligent Lighting Control System (ILCS)

- (i) The Company shall procure, install and commission three number of separate Intelligent Lighting Control Systems ("ILCS") infrastructure for Transport Scotland, Aberdeenshire Council and Aberdeen City Council, which shall provide intelligent lighting control and monitoring capability. These shall allow for operation of road lighting in a manner consistent with Transport Scotland's guidance documentation on relevant roads, including operation of road lighting by the Company on O&M Roads  

All road lighting assets including illuminated signs and bollards supplied, installed, modified or amended which are part of the works undertaken under this contract shall be controlled and monitored by the ILCS systems.
- (ii) The Company shall consult and comply with the relevant road authorities regarding the procurement of the ILCS to ensure compatibility with any ILCS operating outside of the scheme extents, and to align with the three authorities' existing operating practices, policies and future aspirations.
- (iii) The Company shall agree the operational regimes and lighting levels to be applied through the ILCS with the relevant road authority, taking cognisance of the obligations to operate effectively and efficiently the illuminated assets on the Trunk Road Network including the Contracting Authority's reduction targets regarding carbon dioxide emissions.
- (iv) The ILCS used to control Transport Scotland's road lighting consists of several components. Such ILCS components located at the roadside shall be illuminated assets mounted to provide a reasonable level of protection against tampering and vandalism. The ILCS nominally consists of the following components:
  - (a) LED drivers or ballasts compatible with the ILCS. The LED drivers or ballasts shall be of electronic type. Communications between the LED driver or ballast and the lantern communications module (LCM) shall be in accordance with an accepted industry standard;
  - (b) Illuminated asset mounted LCM shall communicate wirelessly with the lantern group communications module (LGCM), and shall be directly powered from the LED driver/ballast;
  - (c) Illuminated asset mounted LGCM shall communicate wirelessly with both the LCM and the ILCS host server, and shall be directly powered from the LED driver/ballast;

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- (i) The wireless communications between the LGCM and the ILCS central host server shall utilise the UK mobile phone network;
  - (ii) The Company shall be responsible for all aspects of setting up and maintaining, and all on-going costs of the communications network to support the ILCS;
  - (iii) The LGCM shall incorporate an ambient light monitoring to provide resilience in the form of dusk to dawn switching, in the event of loss of communications between the roadside ILCS equipment and the ILCS host server.
- (d) An ILCS hardware hosted server shall be dedicated to Transport Scotland's ILCS, which shall be maintained and located as part of the Company's agreement with the ILCS supplier.
- (e) Access to the ILCS host server shall be through a web based portal, accessible using industry standard software. The Company shall be responsible for any costs associated with the provision of this web based access including ILCS hosting costs.
- (v) The ILCS used to control road lighting on Trunk Roads shall as a minimum be capable of:
  - (a) dimming, trimming, variable lighting, monitoring and remotely switching the road lighting;
  - (b) remote defect monitoring and reporting on the road lighting assets;
  - (c) maintaining the appropriate lighting levels in the event of a loss of communications between any of the component parts of the ILCS;
  - (d) predictive lamp life monitoring; and
  - (e) operate appropriate lamp maintenance factoring.
- (vi) The ILCS used to control road lighting on Trunk Roads shall have the following functionalities and features:
  - (a) TALQ Compliant;
  - (b) all ILCS components shall be capable of self-identification back to the ILCS host server;
  - (c) incorporate custom definable reporting functionality;
  - (d) full open protocol;
  - (e) 1% resolution for variable lighting changes;
  - (f) all ILCS components shall have appropriate technical and mechanical interface compatibility and approvals with all major luminaire manufacturers;
  - (g) ILCS shall incorporate Hyper Text Transfer Protocol Secure (HTTPS) link security.
  - (h) ILCS shall be Elexon approved;
  - (i) all ILCS components shall be CE approved;

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- (j) all ILCS components shall be designed to the relevant industry standards for compatibility with their operating environment;
  - (k) LGCM to be lantern mounted, and
  - (l) all ILCS components shall be mechanically and electrically robust and resilient.
- (vii) The user interface of the ILCS used to control road lighting on Trunk Roads shall typically provide the following functionalities and features:
- (a) precise control of variable lighting levels;
  - (b) switching and dimming event library;
  - (c) energy saving by fine tuning burning hours ('trimming');
  - (d) switching for local circumstances and events;
  - (e) issuing an override of any of the pre-programmed or automated functions;
  - (f) monitoring the operation and performance of street lighting and sign lighting lanterns;
  - (g) capable of being set to generate alarms when pre-set remotely configured monitoring threshold conditions are met; and
  - (h) web portal user interface.
- (viii) The Company procured ILCS used to control road lighting on Trunk Roads shall be future proofed to a reasonable extent by ensuring full compatibility and interoperability with at least one other readily available ILCS from another system.
- (ix) The Company shall consult and comply with Transport Scotland in respect of suitable provision of access to the ILCS host server by Transport Scotland.
- (x) The Company shall consult and comply with Aberdeen City Council and Aberdeenshire Council in respect of the degree of integration and operability of their ILCS with their respective asset management systems. The company shall be responsible for all costs and associated development work required to integrate their ILCS with Aberdeen City Council and Aberdeenshire Council's asset management systems.
- (xi) The ILCS used to control road lighting on Trunk Roads shall be integrated with other Transport Scotland systems, as a minimum these are:
- (a) Integration with the Transport Scotland's asset management system, which is currently Integrated Road Information System (IRIS) supplied by WDM and operated by Transport Scotland. The Company shall consult and comply with Transport Scotland to fully ascertain the functionality expected from the integration, but shall as a minimum include:
    - (i) automatic synchronisation at least twice daily of the inventories held in both the ILCS and IRIS systems;
    - (ii) automatic status synchronisation at least twice daily of the following attributes:-
      1. lamp failure,

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2. predictive lamp failure (for High Intensity Discharge (HID) lamps ),
  3. lamp condition (for HID lamps),
  4. lamp cycling (for HID lamps),
  5. day burning lamps,
  6. lamp switching times,
  7. lamp burning hours,
  8. ballast or driver faults/failures,
  9. individual lantern lamp burning hours,
  10. energy consumption, total and individual luminaire consumption,
  11. full system diagnostics, and
  12. communication failures;
- (iii) the Company shall be responsible for all associated development work required to integrate the ILCS with Transport Scotland's asset management system. Such integration shall include liaison with Transport Scotland's asset management system provider as required, and the responsibility for all associated costs to fully develop, deploy, and commission full functionality. This integration may include software developments of both the ILCS and Transport Scotland's asset management system. The Company shall consult and comply with Transport Scotland in relation to development and integration of this functionality;
- (iv) interface links between the ILCS and IRIS shall be to an agreed security level. The Company shall agree and implement through dialogue with Transport Scotland's asset management system provider (WDM) the required security protocols;
- (v) IRIS to provide Transport Scotland with energy management, inventory and asset performance services.
- b) Integration with the Traffic Scotland system, which is used to manage Intelligent Transport Systems infrastructure across the Trunk Road Network. Part of the Traffic Scotland system is remote dynamic lighting control system (RDLCS) which, based upon the Highways Agency Motorway Road Lighting Control System (MoRLiCS), uses traffic data to vary lighting levels across the Trunk Road Network. Such integration shall include liaison with the Traffic Scotland providers as required, and the responsibility for all associated costs

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to fully develop, deploy and commission full functionality. The Company shall consult and comply with Transport Scotland in relation to the development and integration of this functionality.

- (i) Interface links between the ILCS and the Traffic Scotland system must be to an agreed security level. The Company shall agree and implement through dialogue with the Transport Scotland's Traffic Scotland system provider the required security protocols.
- c) RDLCs is subject to Transport Scotland's operational strategy and the associated responsibilities as required.

#### 1.10.15 Transport Scotland Supplementary Guidance Documents

The Company shall take cognisance of the following Transport Scotland guidance documents in their design and provision of road lighting and electrical Works.

- (i) LDS8001 07 – Roadside Electrical Assets and Lighting Identification System;
- (ii) LDS8004 09 – Roadside Electrical Assets and Lighting Health & Safety File Requirements with Model Forms;
- (iii) LDS8005 09 – Electrical Inspection and Testing of Lighting and Associated Electrical Assets and Installations with Model Forms;
- (iv) LDS8006 09 – Electricity Supplies to Roadside Electrical Assets and Lighting;
- (v) LDS8009 09 – Electrical Inspection and Testing of Lighting and Associated Electrical Assets and Installations with Model Forms
- (vi) LDS8013 09 – Guidance on making Roadside Electrical Assets obsolete, redundant or derelict;
- (vii) LDS8014 09 – Competency Requirements Relating to Work on Transport Scotland's Roadside Electrical Assets and Lighting;
- (viii) LDS8017 09 – Special Requirements for Local Authority Roadside Electrical Assets;
- (ix) LDS8018 09 – Guidance on Sustainability in Relation to Roadside Electrical Assets and Lighting;
- (x) LDS8023 09 – Electrical Maintenance Guidelines;
- (xi) LDS8025 09 – Typical Drawings for Roadside Electrical Assets.

## 1.11 Weather Stations and Historical Weather Reference Locations

### 1.11.1 Scope of Works

- (i) The Company shall be responsible for the overall design, supply, procurement, delivery, infrastructure, installation, testing, commissioning, liaison, and the works and services required for the operation of Weather Stations. The Company shall submit for the Contracting Authority's written acceptance design proposals including drawings indicating the exact

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physical positions of the individual Weather Stations, prior to undertaking any site works associated with these facilities.

- (ii) The Company shall co-locate the facilities with ITS roadside infrastructure where possible.

#### 1.11.2 Locations and Type of Weather Stations

- (i) The Company shall provide six Weather Stations, each comprising sets of meteorological sensors with their respective outstations, at the locations as detailed in Table 3.

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Table 3 – Weather Station Locations

| Weather Station | Location                       | Chainage                  |
|-----------------|--------------------------------|---------------------------|
| <b>MET1</b>     | Fastlink                       | To Be Agreed with TS TRBO |
| <b>MET2</b>     | Cleanhill to Charleston        | To Be Agreed with TS TRBO |
| <b>MET3</b>     | Cleanhill to South Kingswells  | To Be Agreed with TS TRBO |
| <b>MET4</b>     | South Kingswells to Craibstone | To Be Agreed with TS TRBO |
| <b>MET5</b>     | Craibstone to Blackdog         | To Be Agreed with TS TRBO |
| <b>MET6</b>     | Balmedie-Tipperty              | To Be Agreed with TS TRBO |

- (ii) The Company shall provide at each of the Weather Station locations the following provisions:
- (a) one pair of infra-red (IR) cameras;
  - (b) sensor to measure road surface temperature;
  - (c) sensor to measure temperature at 300 millimetres below the road surface;
  - (d) sensor to measure air temperature;
  - (e) sensor to measure relative humidity / dew point temperature;
  - (f) sensor to measure precipitation;
  - (g) sensor to measure road surface states: dry, wet, moist, ice, frost, snow, and slushy;
  - (h) sensor to measure water layer thickness from 10 microns to two millimetres;
  - (i) sensor to measure ice layer thickness from 10 microns to two millimetres;
  - (j) sensor to measure frost / snow layer thickness from 10 microns to two millimetres;
  - (k) GPRS modem or equivalent at instation and outstation with connection to PSTN;
  - (l) multi-channel data logger;
  - (m) outstation with respective cabinet / enclosure; and
  - (n) the required supporting provisions including but not be limited to the infrastructure and mounting supports for the installation of meteorological measuring facilities, wiring, power supply, maintenance facilities, and data communications facilities.
- (iii) The meteorological measurement facilities provided shall be rated to operate continuously in the climate typically experienced at their respective locations throughout the year.



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- (iv) The Company shall provide a hard landscaping for each facility in according with Schedule 2, Part 4 Section 1g Hard Landscaping Requirements for Traffic Scotland.

## 1.11.3 Infra-Red (IR) Camera Requirements

- (i) A camera mounting pole with cross-arm at the top for mounting of the two IR cameras shall be provided at each of the meteorological measurement locations. The cameras shall be mounted on the cross-arm at a minimum height of 3 metres above the carriageway. The design of the mounting pole shall allow servicing and maintenance to be done without the need for high level access. The Company shall take cognisance of the obstruction free space required by the pole in its folded down position.
- (ii) The IR camera shall be able to automatically switch to day mode, generating colour images without distortion in day time. The camera shall also automatically switch to night mode, turning on the infrared illuminator to generate infrared images during the night time and in poor ambient light conditions. Images shall be generated at frequency of one or more every ten minutes.
- (iii) The camera images shall have the following information stamped along their top edge:
  - (a) date / time (local e.g.: British Summer Time / Greenwich Mean Time);
  - (b) site name and road number; and
  - (c) the direction being viewed (e.g. view from north).The information shall be in text format and shall be legible in colour images during day time or in monochrome images when ambient light is poor.
- (iv) The format and communication protocol of the camera shall conform to open or public domain standards including the Department for Transport developed TR2020 protocol, where applicable, allowing them to be interfaced, read, edited, archived off-line, and presented on internet web page.

## 1.11.4 Data Logging and Communication Requirements

- (i) At each of the Weather Stations the Company shall provide multi-channel data loggers to capture all measurement outputs from the meteorological sensors and BT telephone socket complete with detectable telephone signal.
- (ii) The data loggers shall be weather and water / moisture resistant able to operate continuously under the climate normally experienced in a roadside cabinet in Scotland throughout the year.
- (iii) Data stored in the data loggers shall be retained for a minimum of 120 hours in the event of external power failure.
- (iv) The channel range and resolution of data loggers shall match or exceed the accuracy of meteorological sensors.
- (v) To allow data transmission and configuration, the data logger shall have built-in electronic interface and communication ports conforming to one or more of the following standards: USB, RS-232, and ethernet.

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- (vi) The data loggers shall also be provided with full version of application software enabling system set up, calibration, diagnostics, data management functions such as sensor scan rate, scaling, log interval and data output format.
- (vii) The format and communication protocol of the data logger shall conform to open or public domain standards including the Department for Transport developed TR2020 protocol, where applicable, allowing them to be interfaced, read, edited, archived off-line, and presented on internet web page.

## 1.11.5 Roadside Cabinet Requirements

- (i) The Company shall provide a roadside cabinet at each of the Weather Station locations. The Company shall provide complete infrastructure required by the roadside cabinet including but not be limited to the following:
  - (a) cable containment system;
  - (b) cable chambers;
  - (c) power supply;
  - (d) civil structure openings;
  - (e) cabinet plinth; and
  - (f) other provisions or structure required to complete the works.
- (ii) The roadside cabinet provided shall meet IP65 against ingress of water and dust. The roadside cabinet shall be sized and fitted to house data logger, data communication equipment, BT telephone socket, provisions required for the functioning of meteorological sensors, power supply, and a 13 amp maintenance power socket.
- (iii) The Company shall consult and comply with the Contracting Authority regarding the lock-and-key set, labelling of the equipment, and labelling of the exterior surface of the roadside cabinet.
- (iv) The roadside cabinet shall be made of sheet steel and shall be hot dip galvanized to BS 1461 and treated and painted to RAL number 7015.

## 1.11.6 Historical Weather References

- (i) The Company may acquire historical weather information via the Met Office web site: [www.metoffice.gov.uk](http://www.metoffice.gov.uk).

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## 2 Structures General Requirements

### 2.1 General

- 2.1.1 The Design of all Structures shall, as a minimum, be in accordance with the requirements of Eurocodes, the DMRB and Transport Scotland Interim Amendments.
- 2.1.2 All Structures shall undergo a Category 3 design check as defined by BD2 Technical Approval of Highway Structures. The design checking of all Structures shall be in accordance with the requirements of Eurocodes, the DMRB and Transport Scotland Interim Amendments.
- 2.1.3 For the purposes of these New Works Requirements, in addition to Structures listed in Appendix H, culvert headwalls, mammal underpasses, pier protection, closed circuit television (“**CCTV**”) supports and variable message sign (“**VMS**”) substructures and superstructures shall be regarded as Structures. The use of steel support plinths for MS3 VMS, and MS4 VMS shall not be permitted.
- 2.1.4 In addition to the requirements of Section 2.1.1 the design of the New Works for all Structures over or adjacent to railway lines shall be in accordance with the relevant European and National standards, statutory and Health and Safety Executive (“**HSE**”) / Office of Rail Regulation (“**ORR**”) requirements, and the relevant Network Rail Group and Line Standards. The Company shall consult and comply with the requirements of Network Rail and / or any other relevant railway Statutory Undertaker or owner / operator.
- 2.1.5 The Company shall ensure that the design of the New Works shall comply with the requirements of Network Rail and / or any other relevant railway undertaker or owner / operator. It is envisaged that construction and / or modification of all Structures over railway lines will be undertaken using ‘Rules of the Route’ possessions for Network Rail lines or other agreed possessions for lines owned / operated by others. The Contracting Authority understands (without guarantee or warranty) that it is the policy of Network Rail to allow disruptive possessions only when it has been demonstrated that the work cannot be completed using non-disruptive possessions. No disruptive possessions have been pre-booked.
- 2.1.6 The Company shall consult and comply with the requirements of the Scottish Environment Protection Agency (SEPA) with regard to the design, execution, completion and maintenance of all Structures adjacent to watercourses. The Company shall provide the Contracting Authority with the completed Consultation Certificate, in accordance with Section 8 of PART 5 of these New Works Requirements.
- 2.1.7 The Company shall consult and comply with the requirements of Statutory Undertakers and owners of Private Apparatus including, but not limited to:
- (i) Scottish Water;
  - (ii) Scottish and Southern Energy Transmission
  - (iii) Scottish and Southern Energy Distribution;
  - (iv) Scotland Gas Networks;
  - (v) BT;

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- (vi) Trafficmaster;
- (vii) Cable and Wireless;
- (viii) BP; and
- (ix) Shell.

in relation to the design for the layout and location of apparatus, over, through and adjacent to Structures and the method of access to such apparatus. The Company shall provide the Contracting Authority with the completed Consultation Certificate in accordance with Section 8 of PART 5 of these New Works Requirements.

**2.2 Location and Description of Structures**

- 2.2.1 The approximate locations and brief descriptions of the principal Structures in the design of the New Works shall be as described in Appendix H.
- 2.2.2 The Additional Requirements for Particular Structures are set out in Section 3 of this Schedule 2 Part 2.
- 2.2.3 In the event that an alternative arrangement is proposed for any Structure, which is considered by the Contracting Authority at their sole discretion to be otherwise compliant with the requirements of the Agreement and to provide a similar or better level of performance, then the alternative arrangement may be considered acceptable by the Contracting Authority. The Company shall be required to consult and comply with the requirements of the Contracting Authority in respect of appropriate alternative design and other parameters for such an alternative arrangement.

**2.3 Design Loading**

- 2.3.1 The design loading for all Structures shall be as described in Appendix H.

**2.4 Design Headroom**

- 2.4.1 The design of Structures shall provide the minimum headroom stated in Appendix H as defined in Table 6-1 of TD27 in the DMRB.

**2.5 Road Cross Section at Structures**

- 2.5.1 Carriageway and verge widths at Structures shall be as described in Appendix H.

**2.6 Parapets and Environmental Barriers**

- 2.6.1 All parapets and other road restraint systems on Structures including vehicle parapets, pedestrian parapets and pedestrian protection at headwalls, wingwalls and retaining walls shall be in accordance with Series 400 of the Specification, BS EN 1317 and TD 19 of the DMRB, as described by Transport Scotland Interim Amendment No. 39 (TS IA 39).
- 2.6.2 Vehicle parapets shall be compatible with the vehicle restraint systems to which they are, or shall be, connected in accordance with Schedule 2 Part 2 of this Agreement.

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- 2.6.3 New vehicle parapets shall extend at least two panels or six metres, whichever is the greater, beyond the top of the slope intersecting line.
- 2.6.4 Unless otherwise stated, steel parapets shall be unpainted and galvanised with a minimum coating finish of 100 microns. If painting of steel parapets is required, prior to painting they shall receive appropriate treatment to aid paint adhesion as stated in the Specification, Table 19/1. The colour of the paint protection system shall be BS 18B17.
- 2.6.5 Unless otherwise stated, vehicle containment parapets and pedestrian parapets of aluminium, concrete or combined metal and concrete construction shall not be permitted on Structures.
- 2.6.6 Where stainless steel parapets or handrails are required, these should be designed to be vandal and theft proof to the satisfaction of the Contracting Authority.
- 2.6.7 Environmental barriers, including noise barriers, and lighting columns, shall be mounted outwith the working width of parapets. Steel brackets shall not be permitted and concrete blisters will only be permitted to support lighting columns.
- 2.6.8 Parapets on all Structures over the AWPR/B-T shall have mesh infilling which shall have apertures with a perimeter not exceeding 175 mm and with no opening dimension greater than 50mm.

## 2.7 Structural Form

- 2.7.1 New Structures shall be such that a consistency of materials and finishes shall be achieved throughout the New Works, giving the appearance of a 'family' of Structures.
- 2.7.2 Unless otherwise permitted in Section 3, bridges shall have a constant superstructure thickness.
- 2.7.3 For the purposes of the design of the New Works, half height abutments shall be abutments where the exposed height of the front face of the abutment is half of the vertical distance between the back of verge level and the bridge deck soffit.
- 2.7.4 For the purposes of the design of the New Works, three-quarter-height abutments shall be abutments where the exposed height of the front face of the abutment is three-quarters of the vertical distance between the back of verge level and the bridge deck soffit.
- 2.7.5 Unless otherwise specified, for new Structures, the design of the New Works shall provide deck edges with cantilevers, which shall be a constant dimension over the length of the superstructure. The minimum widths of cantilevers shall be as noted below, where the span lengths shall be measured along the skewed length where the structure is skewed:
- (i) 500mm where the superstructure is an insitu concrete slab with a span between 10m and 15m
  - (ii) 1000mm where the superstructure is an insitu concrete slab with a span between 15m and 25m
  - (iii) 2000mm where the superstructure is an insitu concrete slab with a span in excess of 25m

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- (iv) 500mm where the superstructure is precast beam and insitu concrete slab with a span below 15m
  - (v) 1000mm where the superstructure is precast beam and insitu concrete slab with a span of 15m and above
  - (vi) 500mm where the superstructure is composite steel girders with an insitu concrete slab with a span between 10m and 15m
  - (vii) 1000mm where the superstructure is composite steel girders with an insitu concrete slab with a span between 15m and 25m
  - (viii) 2000mm where the superstructure is composite steel girders with an insitu concrete slab with a span in excess of 25m
- 2.7.6 For structures with multiple spans the minimum cantilever width shall be as defined in Section 2.7.5 using the longest of the multiple spans.
- 2.7.7 Cantilevers are not required where the superstructure is an in-situ concrete slab with a span below 10m.
- 2.7.8 For composite steel girder and in-situ concrete slab superstructures the cantilever width shall be measured from the outside edge of the parapet edge beam to the outer face of the outer girder web.
- 2.7.9 All concrete wingwalls and retaining walls with a patterned profile finish shall have a cantilevered cope. The minimum width of the cantilever shall be 250mm.
- 2.7.10 Where deck edges and cantilevers of existing Structures are to be reconstructed, the existing cantilever width shall not be reduced.
- 2.7.11 All wingwalls, retaining walls and bridge decks shall have copes with a constant inward 2.5 per cent crossfall.
- 2.7.12 The use of leaf piers shall not be adopted unless otherwise permitted in Section 3 of Schedule 2 Part 2 of this Agreement.
- 2.7.13 Unless otherwise stated, intermediate piers at Overbridges shall be circular columns which have a maximum diameter of 1.2 metres and a minimum distance of 4 metres between centres.
- 2.7.14 Where the design of the New Works includes prefabricated elements including, but not limited to, precast concrete beams or steel girders as main members in deck construction, the deck shall be made structurally continuous over intermediate piers.
- 2.7.15 Where the design of the New Works includes a transverse diaphragm over intermediate piers, it shall be formed within the depth of the deck with no extension below the deck soffit.
- 2.7.16 The use of a pier crosshead beam in the design shall not be permitted.
- 2.7.17 The use of gabions shall not be permitted in the Design of the New Works.

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**2.7.18 Overbridges**

- 2.7.18.1 Overbridges are Structures identified as such in Appendix H, and are typically new Structures which span over Trunk Roads to be constructed as part of the New Works.
- 2.7.18.2 The acceptable forms of Overbridges shall be as defined on drawings B1033200/CD/DEF/ST/001 and B1033200/CD/DEF/ST/002.
- 2.7.18.3 Where there are multiple main spans over Trunk Roads to be constructed as part of the New Works they shall be of equal length unless the road geometry below prevents it due to the presence of slip roads. Where this is the case the acceptable difference in span length shall be the width created by the slip road at the structure location.
- 2.7.18.4 Both abutments shall take the same form and shall be either:
- (i) no greater than half height abutments provided no other supports are located in the adjacent earthwork slopes or;
  - (ii) completely buried bank seat type abutments either with or without a single line of supports in the adjacent earthwork slopes.
- 2.7.18.5 Unless otherwise stated, wingwalls to Overbridges shall be parallel to the road above.
- 2.7.18.6 Where the superstructure of an Overbridge is inclined at an angle of more than 2.2 degrees to the horizontal, measured across the full longitudinal length of the Structure, a bank seat type abutment with a single line of supports in the adjacent slopes shall not be permitted at the low end of the Structure. Both abutment types stated in clause 2.7.18.4 shall be permitted at the high end of the Structure..
- 2.7.18.7 Where the slope of the earthworks from the back of the verge up to the bridge deck soffit is greater than 30 degrees a bank seat type abutment with a single line of supports in the adjacent earthwork slopes shall not be permitted.
- 2.7.18.8 Where concrete plinths are used in place of a central reserve road restraint system at Overbridge pier locations, the top of the plinth shall align with the top of the adjacent road restraint system. If the adjacent road restraint system is a concrete barrier then the profile of the traffic face of the concrete barrier shall be continued along the traffic face of the plinth.
- 2.7.18.9 Adequate working width shall be provided from the front face of concrete plinths to structural supports.
- 2.7.18.10 Where steel girders are used for all Overbridges they shall be painted with the colour RAL 7046.
- 2.7.18.11 Where steel girders are used for some Overbridges, and concrete is used for other Overbridges, the steel girders shall be painted with the colour RAL 9002.

**2.7.19 Underbridges**

- 2.7.19.1 Underbridges are Structures identified as such in Appendix H, and are typically Structures which span over obstacles crossed by the Trunk Roads to be constructed as part of the New Works. Where Underbridges span over roads they shall be considered as either Junction Underbridges or Side Road Underbridges, as identified in Appendix H.
- 2.7.19.2 Unless otherwise stated, the form of the Junction Underbridges shall be single span structures with no greater than half-height abutments.



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- 2.7.19.3 The form of the Side Road Underbridges shall be single span structures with no greater than three-quarter-height abutments.
- 2.7.19.4 Unless otherwise stated, wingwalls to Junction Underbridges and Side Road Underbridges shall be parallel to the road above.
- 2.7.19.5 Where the superstructure is composite steel girders with an insitu concrete slab for all Junction Underbridges and Side Road Underbridges they shall be painted with the colour RAL 7046.
- 2.7.19.6 Where the superstructure is composite steel girders with an insitu concrete slab for some Junction Underbridges, and Side Road Underbridges, and the superstructure is an insitu concrete slab or precast beam and insitu concrete slab for other Junction Underbridges and Side Road Underbridges, the steel girders shall be painted with the colour RAL 9002.
- 2.7.19.7 Lighting below Underbridges shall be soffit mounted, and shall be between beams where a beam and slab deck is provided. Lighting columns shall not be permitted.

**2.7.20 Underpasses**

- 2.7.20.1 Underpasses are those Structures identified as such in Appendix H and are typically Structures which span over pedestrian or agricultural routes crossed by the Trunk Roads to be constructed as part of the New Works. Where an Underpass is identified as a Farm Underpass in Appendix H the requirements of Section 2.12.2.21 shall apply.
- 2.7.20.2 Unless otherwise stated, wingwalls to Underpasses shall be parallel to the road above.
- 2.7.20.3 All exposed internal and external walls of all NMU Underpasses identified as such in Appendix H shall have a proprietary anti-graffiti coating applied to their full area including any stone masonry facing.

**2.7.21 Structures Over Watercourses**

- 2.7.21.1 The design of the Structures listed below shall ensure that the ratio of the overall length of the longest abutment divided by the mean height from the watercourse bank to the soffit shall be no greater than 10:
- (i) PS02 - Limpet Burn Underbridge
  - (ii) PS06 - Burn of Muchalls Underbridge
  - (iii) PS11 - Blaikiewell Burn Underbridge
  - (iv) PS41A – Bogenjoss Burn Underbridge
  - (v) PS48 - Goval Burn Underbridge 1 (B977 West)
  - (vi) PS50 - Mill Lade Underbridge (A947)
  - (vii) PS51 - Goval Burn Underbridge 2 (A947)
  - (viii) PS54 - Goval Burn Underbridge 3 (A90)
- 2.7.21.2 For the Structures listed in 2.7.21.1 above wingwalls shall be either parallel to the road over the structure or played at up to 45° to the road over the structure.
- 2.7.21.3 For the purposes of the design of the New Works, spate shall be assumed to be the flood flow for a storm with a return period of 25 years.

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- 2.7.21.4 Where the watercourse is subject to tidal influence, spate flow levels shall be the peak flow levels which would occur during a storm with a return period of 25 years simultaneous with a tidal event with a high water level of mean high water springs.
- 2.7.21.5 Manholes shall be provided to culverts at locations along the length of the culvert at spacings of not more than 50 times the diameter or clear span of such culvert, subject to a maximum spacing of 90 metres. Manholes shall not be coincident with any part of the carriageway above the culverts.
- 2.7.21.6 The design of the watercourse Structures and the like shall make provision for safe access for inspection and maintenance purposes.
- 2.7.21.7 The design and selection of clear span for watercourse Structures shall be such that the land adjacent and upstream of the Structures shall not suffer inundation under design flood conditions.
- 2.7.21.8 The Structure for the watercourse shall be designed to accommodate the flood flow for a storm with a return period of 200 years with a minimum freeboard of 300mm.
- 2.7.21.9 The Design for all watercourse Structures shall in addition be in conformance with the New Works Guidance Booklet: *River Crossings and Migratory Fish - A Consultation Paper* produced by the Scottish Executive (April 2000).
- 2.7.21.10 Where it is proposed to modify existing watercourse Structures, including extending watercourse Structures, the Design shall ensure that the existing cross-section is maintained.
- 2.7.21.11 The minimum span of each new Structure shall not be less than any existing Structure it is replacing.
- 2.7.21.12 Where an Underpass is combined with a watercourse crossing, the Underpass shall be separated from the watercourse using a 1.5m high parapet.

**2.7.22 Post-Tensioned Construction**

- 2.7.22.1 Where the Company proposes to use post-tensioned construction they shall consult and comply with the requirements of Transport Scotland (Bridges Branch). The Company shall provide Consultation Certificates in accordance the Certification Procedure in respect of this requirement.
- 2.7.22.2 The design of the New Works and construction of post-tensioned concrete shall comply with the requirements and recommendations provided in the latest edition of Concrete Society Technical Report No 72 Durable Post-Tensioned Concrete Structures unless stipulated otherwise in these New Works Requirements.
- 2.7.22.3 The Company shall ensure that the supplier and installer of prestressing tendons shall be fully certified in accordance with the UK Certification Authority for Reinforcing Steels ("CARES") Certification Scheme for the supply and Installation of Post-tensioning Systems in Concrete Structures, in accordance with CARES Appendix 2a(i) or equivalent.
- 2.7.22.4 To avoid second order effects due to beam deflections between points where the tendons are fixed, external tendons shall be restrained transversely relative to the concrete section at centres not exceeding 12 times the minimum depth of the beam between the fixing points.
- 2.7.22.5 In the absence of test results or other investigation justifying smaller values, the radius of curvature of external tendons in the deviators shall not be less than the following values:

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**Tendon (strand number – size) Minimum radius (metres)**

|                        |     |
|------------------------|-----|
| 19 -13mm and 12 – 15mm | 2.5 |
| 31 -13mm and 19 – 15mm | 3.0 |
| 55 -13mm and 37 – 15mm | 5.0 |

- 2.7.22.6 Where precast segmental construction is adopted, the tendons shall be external and replaceable without damage to either the tendons or the Structure. In addition, adequate provision shall be made for inspection and maintenance of the tendons.
- 2.7.22.7 The Company shall ensure that the supplier and installer of grouting for post-tensioning systems shall be fully certified in accordance with the CARES Certification Scheme for Void Grouting of Post-tensioning System in Concrete Structures in accordance with CARES Appendix PT2 (a) v or equivalent.
- 2.7.22.8 For insitu construction using bonded tendons the Company shall carry out a full-scale grout trial in accordance with the Specification and the latest edition of the Concrete Society Technical Report No 72 Durable Post-Tensioned Concrete Structures, prior to construction of any in situ post tensioned bridges.
- 2.7.22.9 For insitu construction using bonded tendons a full-scale grout trial shall be to the profile of a typical tendon in each Structure and shall be over the full length of the tendon contained in each Structure design.
- 2.7.22.10 Insitu construction using unbonded internal tendons shall not be permitted in the Design.

**2.8 Structural Finish**

- 2.8.1 Finishes to Structures shall be such that a consistency is achieved throughout the New Works.
- 2.8.2 With the exception of Overbridge piers which shall comply with the requirements of Section 2.8.7 all exposed in situ structural concrete constituents shall provide a consistency of colour and exposure.
- 2.8.3 Plain concrete finishes shall not be permitted for large areas of exposed vertical surfaces except for the interior and wingwalls of culverts.
- 2.8.4 Unless otherwise stated all exposed vertical concrete surfaces on reinforced concrete wingwalls, abutment walls, retaining walls and interior surfaces of underpasses, shall have a patterned profile type finish which shall be consistent throughout the scheme.
- 2.8.5 Unless otherwise stated the patterned profile type finish shall be rectilinear panels defined by recessed chamfered joints and recessed equally spaced tie holes as shown on drawing B1033200/CD/DEF/ST/003. Dimensions for this type of finish shall be rectilinear panels 1170 vertically x 2390mm horizontally, formed with recessed chamfered joints 50mm wide x 20mm deep horizontally and 50mm wide x 10mm deep vertically. Recessed equally spaced tie holes shall be 50mm diameter x 20mm deep located 200 x 200mm from each corner. The concrete face shall have an F4 finish.
- 2.8.6 Rectilinear panels to wing walls shall be set out from the top corner where the top of the wing wall meets the abutment. Panels on the front face of the abutment shall be set out from the centre of the abutment.

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- 2.8.7 Unless otherwise stated, all concrete Overbridge piers shall comprise a dark grey coloured concrete comprising 5% black iron oxide (or similar) and exposed 10mm silver grey coloured granite aggregate finish. Samples of the required finish are available for viewing at the Glasgow office of Jacobs U.K. Limited (95 Bothwell Street, Glasgow, G2 7HX, UK) contact [REDACTED].
- 2.8.8 Prior to commencement of the Works the Company shall provide samples of the bridge pier finish to the satisfaction of the Contracting Authority. This shall be used as the datum for achieving a consistency of colour and exposure for all Overbridge piers.
- 2.8.9 All concrete Overbridge piers shall have horizontal recessed joints provided at 1.0 metre centres set out from deck soffit level. All joints shall be formed by 2 No. 25mm x 25mm chamfers with a maximum of 10mm between.
- 2.8.10 Concrete finish class F1 and F2 as defined in the Specification shall not be permitted on any exposed concrete surface.
- 2.8.11 Exposed concrete arises shall be finished with a 25 millimetre by 25 millimetre chamfer unless otherwise specified.
- 2.8.12 Where steel universal beam, plate girder or box construction is adopted:
- (i) splices, where provided in internal spans, shall be positioned symmetrically about the centre line of the span;
  - (ii) splices, where provided in end spans, shall be positioned a distance from the adjacent pier proportional to the distance from the pier to a splice, if provided in the adjacent internal span, in the ratio of the end span to adjacent internal span. Where no splice is provided in the adjacent internal span, the splice in the end span shall be positioned to suit the design of the end span;
  - (iii) with the exception of bearing stiffeners, intermediate stiffeners shall not be permitted on the outer face of steel universal beam and plate girders at the edge of the deck;
  - (iv) where steel box construction is adopted the external surfaces of the boxes shall be free of both intermediate stiffeners and / or bearing stiffeners; and
  - (v) the use of bolted splices on external members shall not be permitted. Only full strength butt welds shall be allowed.
- 2.8.13 The interior surfaces of accessible steel box sections shall be painted. The paint colour code shall be BS 10C33.

## 2.9 Service Ducts

- 2.9.1 The design of the New Works shall include the services and service duct requirements specified in Appendix H.
- 2.9.2 The design of all service ducts shall make due allowance for anticipated settlement of embankments and structural elements.
- 2.9.3 Service ducts, pipes and the like shall not be exposed in the finished Structure.

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- 2.9.4 Wherever possible, service ducts shall be accommodated within the raised verges across the bridge superstructure and shall be surrounded with Class C28/35 fibre reinforced air entrained concrete as defined in Section 2.12.
- 2.9.5 Where service ducts are accommodated in raised verges across the bridge superstructure, the minimum depth of concrete cover over the duct shall be 75 millimetres and the minimum width of concrete between ducts shall be 50 millimetres.
- 2.9.6 Where the design of the New Works requires the use of service troughs, the troughs shall be fully waterproofed, inspectable and positively drained. In addition, sufficient space around services shall be agreed with the service authority to enable future inspection, maintenance and replacement of the service.
- 2.9.7 Ducts shall be suitably sleeved at any expansion joints to prevent the ingress of water.
- 2.9.8 All ducts and sleeves shall be capable of carrying accidental actions from vehicles on the bridge in accordance with Eurocode BS EN 1991-2.
- 2.9.9 Ducts, whether empty or containing services, shall be sealed to prevent the ingress of water.
- 2.9.10 All apparatus carried by bridge decks shall be replaceable without disruption to, or removal of the structural concrete or the waterproofing system.
- 2.9.11 Notwithstanding any other provisions of the Agreement, ducts within bridge decks shall be of a minimum 100 millimetres diameter.
- 2.9.12 The location of apparatus through or adjacent to Structures shall meet the requirements of the Statutory Undertakers.
- 2.9.13 Access chambers shall be provided at each end of each Structure carrying apparatus and shall be so designed to curtail passage of water along ducts.
- 2.9.14 Each service duct chamber shall be suitably drained. Covers and frames for service duct access chambers shall conform with Class D400 and Class B125 to BS EN 124, be watertight and have a strength class appropriate to their location.

**2.10 Structural Drainage**

- 2.10.1 The design of all drainage shall make due allowance for anticipated settlement of embankments and deflection of structural elements.
- 2.10.2 Unless stated otherwise, sub-surface road drainage shall not be contained within or suspended below bridge superstructures.
- 2.10.3 Systems for the drainage of surface water from the superstructure shall be so designed that water shall not be allowed to fall freely from the superstructure.
- 2.10.4 Drainage pipes shall not be exposed in the finished Structure.

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- 2.10.5 Drainage systems shall not contain details which shall be integral with either the superstructure or sub-structure of any Structure, such as downpipes cast into abutments.
- 2.10.6 Bridge decks shall be provided with an adequate surface water drainage system, minimum diameter 100 millimetres, which shall be capable of being rodded from both ends. The maximum distance between rodding points and access points in combined kerb and drainage units shall be 40 metres.
- 2.10.7 Drainage pipes shall be suitably sleeved at any expansion joints to prevent the egress of water.
- 2.10.8 Holes shall be provided to drain the voids of superstructures. The holes shall be formed such as to prevent passage of water along the underside of the superstructure and shall discharge to an area remote from the carriageway.
- 2.10.9 A positive drainage system shall be provided to drain any water which may reach the deck waterproofing.
- 2.10.10 All Structures drainage outfalls shall be fitted with a suitable vermin cover.
- 2.10.11 The top surfaces of bridge superstructures shall have adequate falls to prevent ponding thereon.
- 2.10.12 Manholes shall be provided at each end of each Structure. Covers and frames shall conform with Class D400 of BS EN 124 and be watertight.
- 2.10.13 Drainage water from the superstructure of any Structure shall not be discharged into the drainage layer behind the sub-structure. Openings through the superstructure to allow the passage of surface water drainage shall not be permitted.
- 2.10.14 All Structures shall incorporate a permeable backing layer in accordance with Clause 513 of the Specification for Highway Works to vertical earth faces. A continuous system of porous or perforated drain pipes not less than 150mm diameter shall be provided below the permeable backing layer in order to collect and dispose of any water percolating through the permeable backing layer. Facilities shall be included for rodding the whole length of the system from inspection manholes positioned at both ends. Weep holes located above ground level shall be provided in the Structure as a visual check that the system is functioning correctly, and limit the rise in water level in the event of a drainage failure. The system shall be connected to a suitable drainage system via a manhole or catchpit or discharged to a suitable outfall. Permeable backing and drainpipes are not required to culverts subject to the culvert being designed for hydrostatic loads.
- 2.10.15 Positive drainage shall be provided to all underpasses in accordance with TD 36 of the DMRB.
- 2.10.16 Drainage systems shall be sufficiently robust to withstand damage during cleaning and shall be resistant to all commonly occurring chemical spillages.
- 2.10.17 Bridge superstructures shall project beyond the substructure such as to prevent water from running down piers and abutments.

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- 2.10.18 Suitable drip checks shall be provided at all copings, parapet cantilevers, soffit edges, edge beams, superstructure ends over abutments and elsewhere to prevent runoff to the underside of Structures and adjacent vertical faces.
- 2.10.19 Concrete drip checks shall take the form of 100 to 150 millimetres wide by 75 millimetres deep projections below the adjacent soffit.
- 2.10.20 Groove type checks at the edge of bridge decks shall not be permitted.

**2.11 Verges, Side Slopes and Paved Areas**

- 2.11.1 Raised verge construction across bridge superstructures shall continue to the end of any wing walls, return walls, parapet extensions or retaining walls which are returned parallel to the carriageway related to the verge under consideration.
- 2.11.2 Verges shall be designed to provide a smooth transition between the Structures and embankments.
- 2.11.3 Raised verge construction across bridge decks shall consist of Class C28/35 fibre reinforced air entrained concrete as defined in Section 2.12. The surface finish shall be hot rolled asphalt, subject to compliance with Schedule 2 Part 2 of this Agreement, or have a brushed concrete surface finish to give a non-slip surface.
- 2.11.4 The minimum verge crossfall towards the carriageway shall be 2.5 per cent and any widened verges shall be adequately drained.
- 2.11.5 Bridge decks shall be kerbed. Kerb upstands across bridge decks shall be in accordance with TD 27 of the DMRB for Trunk Roads or in accordance with the Relevant Authorities requirements for Side Roads.
- 2.11.6 Where Overbridges are located in a full height rock cutting the exposed natural rock beneath the plan area of the Overbridge shall be retained where possible to act as the apron.
- 2.11.7 Side slopes below the plan area of Overbridges in part height rock cuttings shall retain the natural rock beneath where possible with the remaining area filled with rock fill. Rock fill shall be such that no individual rock shall pass a BS 125mm sieve. Rock fill shall be laid to form a minimum 450mm thick layer placed on a geotextile separator and lightly compacted to form a stable slope which shall match the colour and texture of the exposed rock in the adjacent part of the cutting . The plan arrangement shall include the width of the bridge deck and shall splay at an angle between 30 and 45 degrees to the line of the cope from the point where the cope meets the top of the earthworks slope down to the exposed rock cut.
- 2.11.8 Side slopes below all Junction Underbridges, Side Road Underbridges and Overbridges not in full height or part height rock cuttings shall have a stone masonry apron constructed in accordance with BS 5628, SHW Series 2400 and the following:
- (i) the colour, size, shape, type and texture of the stones used shall match that of stone masonry walls in the local area;
  - (ii) stones shall be laid flat to the slope of the adjacent earthworks;

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- (iii) stones shall be laid in a random rubble arrangement of either coursed or un-coursed construction to match the pattern of stone masonry walls in the local area;
  - (iv) joints shall be mortar joints not exceeding 15mm in width and shall be finished flush with exposed stone masonry faces;
  - (v) the full perimeter of the aprons shall incorporate a border constructed from a single line of stones 400mm wide; and
  - (vi) stones shall be bedded in such a way that prevents them being removed or dislodged as a result of vandalism.
- 2.11.9 Before commencing construction of the stone masonry aprons sample panels shall be prepared of a suitable size to demonstrate to the satisfaction of the Contracting Authority that the required finish shall be achieved by the materials and methods proposed.
- 2.11.10 The stone masonry apron below the plan area of all Junction Underbridges and Side Road Underbridges shall match the width of the bridge deck above measured from outside face of parapet cope to outside face of parapet cope.
- 2.11.11 Stone masonry aprons beneath Overbridges shall be shaped as defined in drawing B1033200/CD/DEF/ST/004 unless, where intermediate column supports are provided, it is not possible to contain all of the intermediate column supports within the stone masonry apron. Where this is the case the apron will take the form as described in Section 2.11.10.
- 2.11.12 For all bridges other than Overbridges, the stone masonry apron shall continue to the front of the verges.
- 2.11.13 Where Trunk Road verges beneath Overbridges have a plan length of 15m or less, measured from the outside face of parapet cope to outside face of parapet cope, the verge treatment shall be continuous with the verge treatment on either side of the Overbridge. Where Trunk Road verges beneath Overbridges have a plan length greater than 15m measured from the outside face of parapet cope to outside face of parapet cope, the length of verge defined on drawing B1033200/CD/DEF/ST/004 shall be surfaced with a stone masonry apron with the treatment of the remaining length of verge continuous with the verge treatment on either side of the Overbridge.
- 2.11.14 Central reserves (excluding hard strips) below the plan area of all bridges shall be surfaced in accordance with Section 1.8 of Schedule 2 Part 2 of this Agreement.
- 2.11.15 Carriageway surfacing over Structures shall be a minimum thickness of 120 millimetres including any additional protective layer to the waterproofing system in accordance with Transport Scotland Interim Amendment Number 24. An additional protective layer of sand asphalt shall only be provided when required by the individual waterproofing system.

## 2.12 Durability

### 2.12.1 General

- 2.12.1.1 Annex C1 of Transport Scotland Interim Amendment Number 39 in reference to BD 57, Design for Durability, and Transport Scotland Interim Amendment Number 23



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shall be taken to be requirements for the design, execution and completion of all Structures.

- 2.12.1.2 Bridges with lengths not exceeding 60 metres and skews not exceeding 30 degrees shall be of integral construction and earth pressures shall be determined in accordance with the PD 6694 Part 1. All bridges shall be designed with a continuous superstructure.
- 2.12.1.3 Integral abutments which include bearings shall not be permitted.
- 2.12.1.4 In-span discontinuities, generally referred to as half joints, shall not be permitted in bridge superstructures.
- 2.12.1.5 The use of concrete hinges of the type described in BE 5/75 and BA 93/09 shall not be permitted.

## 2.12.2 Concrete

- 2.12.2.1 All structural concrete shall be designed concrete in accordance with BS EN 206-1 and BS 8500, subject to the requirements of these New Works Requirements and Transport Scotland Interim Amendment Number 23.
- 2.12.2.2 Unless otherwise stated, all exposed concrete surfaces in the New Works except internal faces of culverts carrying watercourses and drainage, shall be impregnated in accordance with the requirements of BD 43 of the DMRB. This shall include all surfaces of reinforced or prestressed concrete which shall be exposed to the atmosphere in the completed New Works. Exposed concrete surfaces of existing structures shall be impregnated, as stipulated in accordance with the requirements of BD 43.
- 2.12.2.3 Any curing agents used shall be compatible with the surface impregnant.
- 2.12.2.4 All structural concrete shall have a minimum cement / combination content of 360 kilograms per cubic metre.
- 2.12.2.5 All structural concrete shall have a maximum water / cement ratio of 0.45.
- 2.12.2.6 All structural concrete above ground level, other than for precast prestressed concrete bridge beams, shall be air entrained as follows:

| <b>Maximum aggregate size</b> | <b>Minimum air content</b> |
|-------------------------------|----------------------------|
| 20 millimetres                | 3.5 per cent               |
| 14 millimetres                | 4.5 per cent               |
| 10 millimetres                | 5.5 per cent               |

- 2.12.2.7 Other than where it is required for factory precast prestressed concrete bridge beams, structural concrete strength class C50/60 shall be permitted above ground level only if it is required for structural purposes. In such circumstances, concrete strength class C50/60 shall only be permitted subject to the prior approval of Transport Scotland (Bridges Branch).
- 2.12.2.8 The design of all structural concrete for buried components, and any additional protective measures that may be required, shall ensure durability taking into account the design chemical class appropriate to the chemical composition of the soil and groundwater in addition to the stated strength requirements. Sulfate-resisting Portland cement may be required for the most aggressive design chemical classes.

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2.12.2.9 Footway / verge infill concrete shall be placed such that shrinkage cracking is minimised. This shall require either restricting the length of pours or the introduction of crack inducers at discrete intervals for longer pours.

2.12.2.10 Notwithstanding the requirements of Table 1 of Transport Scotland Interim Amendment No 23 the following strength classes and cement / combinations shall apply to structural concrete for the locations indicated in Table 4 below:

**Table 4 Permissible Cement Combinations and Minimum Strength Requirements**

| TS Application                                                                                  | Minimum Strength Class | TS Permitted Cement Combinations (refer to Table A.6 of BS 8500-1:2006) |      |       |                      |                         |                          |       |
|-------------------------------------------------------------------------------------------------|------------------------|-------------------------------------------------------------------------|------|-------|----------------------|-------------------------|--------------------------|-------|
|                                                                                                 |                        | CEM I                                                                   | II A | IIB-S | IIB-V<br>IIB +<br>SR | IIIA<br>+<br>IIIA<br>SR | IIIB<br>+<br>IIIB<br>+SR | IVB-V |
| Footway/Verge Infill Concrete                                                                   | C28/35AF               |                                                                         | ✓    | ✓     | ✓                    | ✓                       | †                        | ✓     |
| In situ reinforced concrete above ground                                                        | C32/40 a.e. or C40/50  |                                                                         | ✓    | ✓     | ✓                    | ✓                       | †                        | ✓     |
| Site cast precast reinforced concrete above ground                                              | C32/40 a.e. or C40/50  |                                                                         | ✓    | ✓     | ✓                    | ✓                       | †                        | ✓     |
| Factory cast precast rc elements, e.g. box culverts, reinforced soil retaining wall panels etc. | C32/40 a.e. or C40/50  | ✓<br>(C40/50 only)                                                      | ✓    | ✓     | ✓                    | ✓                       | †                        | ✓     |
| In situ pre-stressed post tensioned concrete above ground                                       | C40/50                 |                                                                         | ✓    | ✓     | ✓                    | ✓                       | †                        | ✓     |
| Factory cast pre-stressed concrete bridge beams                                                 | C40/50 or C50/60       | ✓                                                                       | ✓    | ✓     | ✓                    | ✓                       | †                        | ✓     |
| Reinforced concrete below ground                                                                | C32/40                 | Depends on DC class. Refer to TS IA 23 and BS8500-1.                    |      |       |                      |                         |                          |       |

Notes

† IIIB cement combination may be considered through Application for Departure from Standard

AF Air Entrained, Fibre Reinforced

a.e. Air Entrained

2.12.2.11 Minimum concrete cover to reinforcement shall be appropriate to the most onerous exposure class at any particular location within a Structure for an intended working life of at least 100 years. Tolerance  $\Delta c$  between the minimum cover and the

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nominal cover to allow for fixing precision shall be in accordance with Transport Scotland Interim Amendment Number 23.

- 2.12.2.12 To ensure that the designed minimum cover to reinforcement shall be achieved, the Company shall carry out a cover meter survey to finished concrete sections in accordance with Clause 1714 of the Specification within one day of removal of formwork and shall submit the results to the Contracting Authority within one further day.
- 2.12.2.13 The use of paint systems or the equivalent to reduce the minimum cover shall not be permitted.
- 2.12.2.14 The Company shall put in place curing procedures which shall include effective methods of monitoring the temperature differences within the concrete members.
- 2.12.2.15 The methods of curing and their duration shall be such that the concrete shall have satisfactory durability and strength and the member shall suffer a minimum of distortion, be free of excessive efflorescence and shall not cause, by its shrinkage, undue cracking in the Structure in excess of the acceptable flexural and early thermal cracking limits.
- 2.12.2.16 Reinforced concrete sections shall be designed such that they comply with the flexural and early thermal crack limits required by Eurocode BS EN 1992-2 for the relevant exposure conditions.
- 2.12.2.17 Exposed or debonded tendons at the ends of precast prestressed beams shall be protected against corrosion.
- 2.12.2.18 If voided concrete slab construction is adopted, then during the placement of concrete, the difference in level of the placed concrete on either side of the void formers shall be controlled to avoid movement of the formers and shall not exceed 150 millimetres.
- 2.12.2.19 Provision shall be made for compacting the concrete below void formers and for drainage of the formed voids. The drainage shall be formed in such a manner as to prevent passage of water along the underside of the deck and shall discharge to an area remote from the carriageway.
- 2.12.2.20 All formed buried concrete surfaces shall be treated with two coats of bitumen paint as specified in Clause 2004 of the Specification.
- 2.12.2.21 Accommodation / farm underpasses shall incorporate sacrificial concrete protection against diesel spillage, abrasion and animal fouling in accordance with the following:
- (i) a sacrificial concrete invert which is separate from the structural base slab of the underpass shall be provided across the full width of the floor to the following criteria:
    - (a) surface finish and grade shall comprise of:
      - (i) 300 millimetres thick Type 1 sub-base to Clause 803 of the Specification
      - (ii) 150 millimetres thick concrete surfacing to BS 8500 with expansion joints at 40 metre centres and contraction joints at four metre centres (see Drawings C1, C2 and C3 in Volume 3 of the MCHW). The surface finish shall be tamped or brushed.
    - (b) sufficient crossfall and longitudinal gradient shall be provided to minimise the risk of icing during winter;

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- (ii) sacrificial concrete shall be provided on the internal walls of underpasses extending from the structural base slab of the underpass to one third of the height of the underpass above the sacrificial concrete invert. In the case of reinforced concrete underpasses this may be provided as an additional 50 millimetres cover to the reinforcement and may be provided as part of a profiled patterned finish. A stepped profile will not be acceptable at a third height. In this case an additional 50mm cover shall be provided over the full height;
- (iii) the requirement for sacrificial concrete protection in a(i) and a(ii) above shall be taken into account in the design of the New Works for the span and height of the underpass.

### 2.12.3 Steelwork

2.12.3.1 Structural steelwork shall be protected using a paint system appropriate to an 'Inland' environment and 'Difficult' access in accordance with Series 1900 of the Specification and shall meet the following minimum durability requirements:

- (i) no maintenance up to 12 years
- (ii) minor maintenance from 12 years
- (iii) major maintenance after 20 years.

2.12.3.2 The Company shall consult and comply with Transport Scotland (Bridges Branch) in respect of proposed paint systems, including in respect of completed Specification Appendices, prior to execution of any relevant part of the New Works. The Company shall not commence any painting Works before Consultation Certificates in accordance the Certification Procedure have been provided to the Contracting Authority in respect of this requirement.

2.12.3.3 All paint systems shall comply with the requirements of current Environmental and Health & Safety regulations and legislation.

2.12.3.4 The use of weathering steel shall be permitted. Where weathering steel is used a coloured paint system shall be specified to the outer faces of the outer members as a minimum.

2.12.3.5 Intermittent fillet welds shall not be permitted outwith areas that are completely protected from the adverse effects of weather.

2.12.3.6 The design of steelwork shall ensure the prevention of the accumulation of water, dirt and debris.

2.12.3.7 Exposed structural steelwork shall not be used in the substructures of Structures.

2.12.3.8 Where the design of the New Works includes transition slabs, stainless steel reinforcement, grade 1.4436 or 1.4462 to BS EN 10088 shall be used in connecting a transition slab to an abutment.

2.12.3.9 Transition slabs shall be treated as part of the superstructure with regard to application of the waterproofing system and the provision of either articulation or movement joints.

2.12.3.10 Reinforcement bridging joints, or items penetrating the concrete surface, and also subject to chloride contamination (e.g. dowel bars) shall be stainless steel Grade 1.4436 or 1.4462.

2.12.3.11 Any mechanical bearings, where permitted, shall be either steel with protection of steelwork against corrosion, or stainless steel with the following minimum grades:

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- (i) plates and flats shall be 1.4436 or 1.4462;
  - (ii) sliding surfaces shall be 1.4436 or 1.4462; and
  - (iii) fasteners shall have mechanical properties and dimensions that comply with grade A4-70 or A5-80. Chemical composition shall comply with grade 1.4436 or 1.4462.
- 2.12.3.12 Anchorages, including threaded anchorages, cast into concrete for attachments to Structures shall be stainless steel grade 1.4362, 1.4436 or 1.4462.
- 2.12.3.13 Fasteners for parapet anchorages shall be stainless steel with the following minimum grades:
- (i) holding down bolts, studs and nuts shall have mechanical properties and dimensions that comply with grade A4-80. Chemical composition shall comply with grade 1.4436 or 1.4462; and
  - (ii) washers shall be grade 1.4436 or 1.4462.
- 2.12.3.14 Provision shall be made to prevent electrolytic corrosion of dissimilar metals.
- 2.12.3.15 Temporary works shall not be attached to any part of the permanent Structure.
- 2.12.4 Qualifications of Parties Involved in Steelwork
- 2.12.4.1 Parties employed to fabricate structural steelwork shall have the necessary technical capability and competence for the type and value of the work to be undertaken. These requirements will be satisfied by the party being registered and audited through a scheme such as the Register of Qualified Steelwork Contractors Scheme for Bridgeworks (RQSC) to the levels appropriate for the value and technical complexity of the structural steelwork.
- (See <http://www.steelconstruction.org/resources/quality/rqsc-bridgeworks.html>) Similarly, where a party is responsible for the design and erection of steelwork, the above requirement shall apply to the relevant categories and value of the works.
- 2.12.5 Quality Management Schemes - Execution of steelwork
- 2.12.5.1 Parties involved in steelwork shall have an independently certified quality management system complying with EN ISO 9001 in place for all structural steelwork executed in accordance with Series 1800. This requirement will be satisfied by the party being registered to National Highway Sector Scheme 20 "The Execution of Steelwork in Transportation Infrastructure Assets" by a relevant UKAS accredited Certification body.
- 2.12.6 Waterproofing
- 2.12.6.1 Bridge deck waterproofing systems shall be in accordance with Transport Scotland Interim Amendment Number 24, shall have a current British Board of Agrément (BBA) Roads and Bridges Agrément Certificate and shall be capable of being non-destructively tested.
- 2.12.6.2 Waterproofing systems shall be independently tested in accordance with the Specification.
- 2.12.6.3 The independent testing organisation shall have current third party quality assurance certification.
- 2.12.6.4 The whole width of the bridge deck slab between parapet upstands and the parapet upstands to a height of 100 millimetres minimum above the adjacent deck slab shall be waterproofed.

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2.12.6.5 In addition to those surfaces specified in the DMRB and elsewhere, the following concrete surfaces shall be waterproofed:

- (i) pier and abutment bearing shelves;
- (ii) inaccessible areas which may be subject to leakage;
- (iii) all internal faces of abutment galleries;
- (iv) vertical faces at deck ends; and
- (v) where buried box sections are proposed in the design including accommodation underpasses, the top surface of the bottom slab. This requirement shall not apply to water carrying Structures e.g. culverts.

2.12.6.6 Further to the testing requirements of the Specification, Holiday testing as defined in the DMRB shall be carried out on the completed waterproofing to check for any discontinuity in the coating and for any thickness less than that specified by the manufacturer.

2.12.7 Resin anchors

2.12.7.1 Chemical Anchorages, including threaded anchorages, dowels and reinforcement bars secured into concrete, rock, stone, masonry or brickwork shall be secured using proprietary resins. The choice of resin shall be appropriate for the substrate material and its preparation, hole orientation, load type(s) and installation and exposure conditions. Polyester resins shall not be used on permanent works and in situations where holes contain or are under water without the written permission of the Contracting Authority.

## **2.13 Maintenance and Inspection**

2.13.1 Provision shall be made for future inspection and maintenance of all Structures. All requirements of Health and Safety Legislation and other relevant requirements shall be observed in such provisions. Standards in excess of the minimum requirements shall be provided where possible.

2.13.2 Where bridge bearings are used they shall be replaceable without requiring the removal of any structural concrete or modification of structural steelwork.

2.13.3 Provisions shall be made to allow for jacking from the substructure during bearing replacement.

2.13.4 Replacement of bearings shall be possible whilst maintaining traffic flows over the Structure in accordance with the requirements of 2171AR of Schedule 2 Part 4 of this Agreement.

2.13.5 Provision for access at Structures shall be made for the following purposes:

- (i) cleaning and painting;
- (ii) maintenance and inspection;
- (iii) jacking, removal / replacement of bearings;
- (iv) removal / replacement of movement joints; and
- (v) inspection of closed cell and box members.

2.13.6 The design for all steel and concrete interfaces on a Structure shall permit ease of access for inspection and maintenance.

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- 2.13.7 Where voided elements of bridge Structures, e.g. box girder decks, voided piers, voided abutment stems, inspection galleries and the like are provided and are of sufficient size to allow internal inspection, access shall be provided in accordance with the following:
- (i) access to the voids shall, where practicable, be from the underside of the bridge;
  - (ii) access points shall be placed in such positions as to give convenient access, and where their use would not cause interference to traffic;
  - (iii) all access points and access ways within the voids shall be suitably sized and designed to allow for the evacuation of a casualty on a stretcher and the like if necessary;
  - (iv) specific emergency routes and exits shall be identified clearly by signs and shall be provided with lighting;
  - (v) access points to the voids, where provided, shall be carefully located and detailed so as to minimise their visibility to passing traffic;
  - (vi) access points to the voids shall not be permitted on surfaces visible on the main bridge elevation, with the exception of access doors and ancillary arrangements for accessing abutment inspection galleries;
  - (vii) all permanent services, equipment and the like shall be capable of withstanding the prevailing environmental conditions including ingress of dust and water and the natural movement of the Structure;
  - (viii) permanent access ladders or steps, as appropriate, shall be provided at changes in level within the voids;
  - (ix) access ladders and steps shall be provided with guardrails;
  - (x) all walking surfaces shall be provided with a non-slip surface coating compatible with any waterproofing or paint system and shall avoid details which create a risk of tripping and shall be self-draining;
  - (xi) permanent lighting with permanent power supply shall be provided for access routes and access chambers;
  - (xii) lighting levels shall be a minimum of 30 lux. Additional emergency lighting shall be provided in the Structure along emergency routes having a minimum intensity of 0.2 lux and having a separate battery operated power supply and warning notices and signs shall be provided to all mains power boards, valves and the like where the operation may affect the safety of persons using the voids of any such Structure;
  - (xiii) all access points to galleries and voids and the like shall be secured from unauthorized access by provision of lockable steel doors or grills;
  - (xiv) public access to any facilities provided for bridge inspection or maintenance shall be prevented by means of suitable barriers, covers and the like and colonisation of accessible areas by plants, animals or birds shall be prevented by the application of suitable measures to be agreed with the Contracting Authority; and
  - (xv) areas shall be provided in front of abutments to Overbridges for non-integral Structures in accordance with the requirements of, CIRIA C543 *Bridge Detailing Guide* or similar detail, proposals for which shall be submitted to the Contracting Authority in accordance with the Certification Procedure.

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2.13.8 The Design shall ensure that the layout of and access to publicly and privately owned services and supplies shall meet the requirements of the relevant statutory bodies, Undertakers and any other companies as well as the requirements of these New Works Requirements.

**2.14 Reinforced Soil**

2.14.1 The Company shall consult and comply with the requirements of Transport Scotland (Bridges Branch) with respect to the design of reinforced soil Structures (i.e. having a face greater than 70 degrees to the horizontal).

2.14.2 Precast concrete facing panels associated with reinforced soil Structures in the New Works shall be replaceable in the event of damage and shall have a patterned profile finish. The Company shall consult and comply with the requirements of Transport Scotland (Bridges Branch) with respect to such works. The Company shall provide the Contracting Authority with the completed Consultation Certificate in accordance with Section 8 of Part 5 of these New Works Requirements.

2.14.3 Precast concrete facing panels shall comprise square or rectangular panels; cruciform units shall not be permitted.

2.14.4 The top edge of precast concrete facing units shall be finished with a continuous cope.

2.14.5 In the design of reinforced soil Structures, the Company shall take due cognisance of factors including, but not limited to:

- (i) durability;
- (ii) vibration from road traffic;
- (iii) floods;
- (iv) water flows;
- (v) replacement of facing panels; and
- (vi) stability following a vehicular fire and the like.

2.14.6 Where used in conjunction with a parapet, the precast concrete facing panels shall extend to the underside of the parapet cope.

2.14.7 Reinforced soil abutments shall not be permitted.

2.14.8 The dimensional tolerances on completion of erection of reinforced soil Structures shall comply with the limitations given in Appendix L of these New Works Requirements. The design tolerances used shall be stated in the Structures Design Statement for each reinforced earth Structure.

2.14.9 Permanent reference points shall be provided on reinforced soil Structures to enable the extent of deformations which occur following completion of the New Works to be monitored.

2.14.10 Reinforced soil slopes (i.e. having a face not exceeding 70 degrees to the horizontal) shall be so finished that they are capable of supporting vegetation.



## **2.15 Corrugated Steel Buried Structures**

- 2.15.1 Corrugated steel buried structures shall not be permitted for Structures on Side Roads.
- 2.15.2 The use of corrugated steel buried Structures to provide access for vehicular traffic through the Structure shall not be permitted.
- 2.15.3 The minimum durability requirement for corrugated steel buried Structures shall be for an aggressive environment.
- 2.15.4 All corrugated steel buried Structures shall have a sacrificial concrete invert protection. The invert shall extend across the full width of the floor and a third of the way up the sides of the Underpasses. This requirement shall be taken into account in the Design of the span and height of the Structure.
- 2.15.5 The ends of all corrugated steel buried Structure type culverts shall be provided with a structural headwall or a concrete ring beam of 300 millimetres minimum thickness. The concrete ring beam shall follow and finish flush with the slope of the adjacent earthworks.
- 2.15.6 Corrugated steel buried Structures shall be designed in accordance with BD 12 of the DMRB.
- 2.15.7 Corrugated steel buried Structures shall have a secondary protective coating system applied to permanently accessible surfaces, with a life to first maintenance of six years.
- 2.15.8 It shall be certified in accordance with BD 12 of the DMRB and shall have a life to major maintenance of 20 years.
- 2.15.9 The secondary protective system shall not be taken into account in determining the sacrificial steel thickness,

## **2.16 Fill to Structures**

- 2.16.1 With reference to HD 35/04, the use of Spent Oil Shale (Blaise) is not permitted as selected granular fill to structures.

## **2.17 Existing Structures**

- 2.17.1 Where it shall be proposed by the Company to incorporate any part of an existing Structure into the design of the New Works, it shall be the Company's responsibility to ensure the adequacy of such Structure within the design of the New Works and carry out all remedial works and strengthening required such that it meets all the necessary standards and certification requirements as set out in the Agreement.
- 2.17.2 The following durability and serviceability limit state criteria defined within the DMRB and Eurocodes for new Structures shall not apply to existing structures or parts of existing Structures incorporated within the design of the New Works:
- (i) stress limitations in concrete and reinforcement;
  - (ii) cover to reinforcement;
  - (iii) minimum reinforcement areas; and

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- (iv) crack widths.
- 2.17.3 All existing Structures to be retained shall be assessed and, if required, strengthened in accordance with the assessment procedure detailed in Appendix J. In respect of bridge bearings, provided there is no evidence of cracking, structural failure or other instability, a qualitative assessment shall be acceptable. In respect of free-standing piers, a quantitative assessment shall be required. The contents of the assessment reports required in accordance with Appendix J shall be based on the requirements of Annex C of BD 101 of the DMRB.
- 2.17.4 Defects in existing Structures to be retained shall be repaired by the Company in accordance with the Particular Requirements of Section 3.
- 2.17.5 Where the parapets of existing Structures are to be replaced, the replacement parapets shall extend at least two panels or six metres, whichever is the greater, beyond the top of the slope intersecting line.
- 2.17.6 Where an existing Structure is to be extended or amended, the extended or amended Structure form and finishes shall match the existing Structure. The requirements for the extended or amended portions of the existing Structures shall be as for new Structures. Extensions to existing crib walling shall not be permitted; any extension of such structures shall be designed as a new Structure in accordance with these New Works Requirements.
- 2.17.7 Existing Structures that are to be abandoned or made redundant within the Site shall be demolished and removed by the Company.
- 2.17.8 Where an existing Structure shall be demolished, it shall be demolished to a minimum of one metre below finished ground level unless otherwise agreed with the Contracting Authority.
- 2.17.9 If an existing Structure shall be modified, the modifications shall be designed in accordance with these New Works Requirements.
- 2.17.10 The existing elements of an existing Structure to be retained shall be assessed in accordance with the Standards in Section 4 to Volume 3 of the DMRB with the exception of loading requirements which shall be as described in Appendix J.
- 2.17.11 Modifications to existing Structures shall not replicate detailing that is not compliant with the DMRB unless otherwise agreed with Transport Scotland (Bridges Branch).
- 2.17.12 Where existing Structures are to be modified the interaction between the modified section and the existing Structure shall not adversely affect the short and long term integrity of both elements. Items to be considered shall include, but not be limited to:
- (i) differential settlement;
  - (ii) creep;
  - (iii) shrinkage;
  - (iv) differential deflection;
  - (v) early thermal cracking; and
  - (vi) traffic induced vibrations, deflection and stresses.

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- 2.17.13 Where maintenance painting of existing Structural steelwork shall be carried out, Structural steelwork shall be protected using a paint system appropriate to an 'Inland' environment and 'Difficult' access in accordance with Series 5000 of the Specification and shall meet the following minimum durability requirements:
- (i) no maintenance up to 15 years;
  - (ii) minor maintenance from 15 years; and
  - (iii) no major maintenance up to 20 years.
- 2.17.14 Maintenance painting of existing Structures shall be carried out in accordance with the requirements of BD 87 of the DMRB. As a minimum, existing structures which undergo maintenance painting shall receive a finishing (top) coat in accordance with Table 50/2 of Series 5000 of the Specification for Highway Works to all exposed surfaces of existing steelwork to ensure a consistent appearance over the structure.
- 2.17.15 The colour of the final paint coat on existing structures on which maintenance painting is carried out shall be RAL 9002.
- 2.17.16 The Company's proposed paint systems, including completed Specification Appendices shall be submitted to the Contracting Authority in accordance with the Certification Procedure prior to execution of any relevant part of the New Works.
- 2.17.17 Where a maintenance painting strategy is to be prepared in accordance with Section 3, the Strategy shall include but not be limited to the following:
- (i) health & safety and environmental considerations;
  - (ii) pre-specification overall survey including steel bearings where present;
  - (iii) categories of failure of the existing paint systems;
  - (iv) requirement for feasibility trials for proposed methods of surface preparation and proposed paint systems; and
  - (v) requirement selection and duties of painting inspection firm.
- 2.17.18 Where bearings and movement joints are to be replaced in a Structure the design of such replacement items shall be in accordance with the Eurocodes. In the design of such replacement items, an additional allowance of +2 degrees Celsius shall be made for climate change.
- 2.17.19 Where bearings are to be replaced in a Structure the Company shall consult and comply with Transport Scotland (Bridges Branch) in respect of the live load regime during the replacement of bearings when the Structure is supported on temporary jacks taking account of the Company's specific traffic management proposals during bearing replacement. The Company shall not commence any bearing replacement Works before Consultation Certificates in accordance with the Certification Procedure have been provided to the Contracting Authority in respect of this requirement.

## **2.18 Removal and Replacement of Existing Waterproofing**

- 2.18.1 Surfaces exposed after the removal of existing waterproofing shall be inspected for either spalling or reinforcement corrosion and repaired in accordance with the Specification.

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2.18.2 Areas contaminated with oil or grease or residue from the removed waterproofing system shall be cleaned with a suitable detergent.

**2.19 Construction Tolerances in Structural Concrete**

2.19.1 The tolerances stated in Clause 1770AR of Appendix 0/1 to the Specification shall be adopted in the design, execution and completion of the New Works.

**2.20 Road Lighting**

2.20.1 Where the design of the New Works incorporates road lighting columns on bridge superstructures the Company shall ensure that the design of such columns ensures that they are located behind the traffic face of the bridge parapet at a minimum distance of the working width of the parapet.

2.20.2 Lighting columns shall not be located directly opposite bridge parapet posts.

2.20.3 The attachment of lighting columns to bridge superstructures by means of bracketed steel fixings shall not be permitted.

2.20.4 Wherever possible, street lighting columns shall be provided in line with columns or other intermediate substructures supporting the bridge superstructure.

2.20.5 The layout of street lighting columns on bridge superstructures shall be symmetrical when viewed on the bridge elevation.

2.20.6 The Company shall consult and comply with the requirements of the local authorities, as appropriate, in connection with the design of road lighting on Side Road Structures in their respective boundaries.

2.20.7 All lighting provided at Underpasses shall be vandal proof. All lighting provided at pedestrian/cycleway Underpasses shall provide a level of illumination in accordance with the recommendations of BS 5489: Part 1.

**2.21 Structures Design Statement**

2.21.1 Prior to the commencement of the design of each structure, the Company shall submit a completed Structures Design Statement, including a completed Annex E Choices and Options table, fully defining the design assumptions and parameters to be used in the design of each Structure.

2.21.2 A proforma Structures Design Statement for Structures is provided in Appendix K.

2.21.3 Following completion of the design a final version of the Structures Design Statement (for Construction) shall be submitted with the Design Certificate and Design Check Certificate, which shall be updated to record, in the Choices and Options table provided as an Appendix to the Structures Design Statement, all decisions made by the Designer that affect the standard of the design of the New Works.

2.21.4 The Company shall consult and comply with the requirements of the Relevant Roads Authority regarding the Structures Design Statement for Structures which shall become the responsibility of the Relevant Roads Authority upon Final

Completion. The Company shall provide Consultation Certificates in accordance the Certification Procedure in respect of this requirement.

## **2.22 As Built Records**

- 2.22.1 As built records shall comply with the requirements of BD 62 of the DMRB. In addition, reference shall be made to the document "Transport Scotland Inspection Manual, Principal Inspections of Trunk Road Structures & Location System – March 2009".
- 2.22.2 A Structures Management System Datasheet shall be compiled for each structure and provided to Transport Scotland (Bridges Branch) one month prior to Final Completion.

### **3 Additional Requirements for Particular Structures**

#### **3.1 Structure PS01 – B979 Netherley Road Overbridge**

3.1.1 The Design for Structure PS01 shall ensure compliance with the following:

- (i) If piers are provided they shall be a plain concrete F3 finish with no horizontal recessed joints.

#### **3.2 Structure PS03 – U89K Auquorthies to Ury Road NMU Underpass**

3.2.1 The Design for Structure PS03 shall ensure compliance with the following:

- (i) The internal abutment walls and external wingwalls shall have a stone masonry facing 2.3m in height over their full length. The stone masonry facing shall be constructed in accordance with BS 5628 and SHW Series 2400. The colour, size and shape, type and texture of the stones used shall match that of stone masonry walls in the local area. Stones shall be laid in a random rubble arrangement of un-coursed construction.
- (ii) The remaining exposed areas of concrete to the abutments and wingwalls shall be finished in accordance with Sections 2.8.5 and 2.8.6.
- (iii) Lighting shall be by means of luminaries positioned at ground level and at the top of the internal stone masonry facing.
- (iv) The footway finish through the underpass shall be a light silver grey granite colour.
- (v) The Company shall consult and comply with Aberdeenshire Council on the lighting and footway make-up requirements.

#### **3.3 Structure PS11 – Blaikiewell Burn Underbridge**

3.3.1 The Design for Structure PS11 shall ensure compliance with the following:

- (i) The north east wing wall of PS11 shall be screened by landscaped earthworks such that the exposed height of wall above ground level shall be no greater than 5m. It shall be permitted to splay the lower part of the north east wing wall up to 90 degrees to the road passing over the structure to retain the landscaped earthworks.

#### **3.4 Structure PS13 – Kingcausie Wildlife Overbridge**

3.4.1 The Design for Structure PS13 shall ensure compliance with the following:

- (i) The form of the structure shall adopt one of the acceptable Overbridge forms described in Section 2.7.18.2.
- (ii) The plan arrangement of the landscaping shall be one of the acceptable plan arrangements shown on drawing B1033200/CD/DEF/ST/005.
- (iii) The arrangement of the landscaping shall be one that provides a meandering pathway across the bridge by varying the profile of the topsoil across the bridge.
- (iv) Below the topsoil a suitable arrangement shall be provided to maintain the growth of the landscaping. Below this, a root barrier system is required to protect the waterproofing membrane and structure.

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- (v) Hardened outer verges 0.6m wide shall be provided between the edges of the landscaping and the bridge parapets.
- (vi) The bridge parapets shall be 1800mm high with solid infill panels 800mm high at the base with an open appearance above with mesh infill complying with Section 2.6.8. Parapets shall extend at least two panels or six metres, whichever is the greater, beyond the top of the slope intersecting line

### 3.5 Structure PS15 – River Dee Crossing

3.5.1 The Design for Structure PS15 shall ensure compliance with the following:

- (i) the commitments set out within the Report to Inform the Appropriate Assessment, prepared in respect of the River Dee Special Area of Conservation, which is an Environmental Assessment Document listed in Schedule 8
- (ii) the form defined on drawings B1033200/CD/DEF/ST/006, B1033200/CD/DEF/ST/007, B1033200/CD/DEF/ST/008, B1033200/CD/DEF/ST/021 and B1033200/CD/DEF/ST/022.
- (iii) The superstructure shall be of concrete construction.
- (iv) The finish to all exposed vertical faces to the piers and abutments shall be to the same requirements for Overbridge piers with the exception of joint positions which shall be as defined on drawings B1033200/CD/DEF/ST/006, B1033200/CD/DEF/ST/007 and B1033200/CD/DEF/ST/008.
- (v) The parapets shall be H4a containment and shall be an open steel parapet of post and rail type.
- (vi) Transparent noise barriers shall be used for noise attenuation and shall be supported by vertical posts and bottom rail only and a top rail shall not be permitted. The top of the noise barrier may be cranked to provide rigidity if required.
- (vii) The noise barrier posts shall have a colour finish to match the parapets.
- (viii) Stainless steel reinforcement shall be provided in the parapet cope over the full length of the structure to remove the requirement for this area to be impregnated in accordance with the requirements of BD 43 of the DMRB.
- (ix) The underside and inclined faces of the box and cantilever soffits of the central span between pier centres shall be excluded from the requirement to be impregnated in accordance with the requirements of BD 43 of the DMRB.
- (x) It shall be permitted to carry the road drainage system within the superstructure. Suitable detailing shall be provided to ensure the drainage system is robust and to prevent leakage and any movement joints shall be located out with the structure. Measures shall be provided to allow any drainage water to escape from the superstructure in the event of a leakage and shall be such that the drainage water does not outfall to the SAC.

### 3.6 Structure PS16 – Milltimber Brae Overbridge

3.6.1 The Design for Structure PS16 shall ensure compliance with the following:

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- (i) The parapets and noise barriers shall take the form as defined on drawing B1033200/CD/DEF/ST/009.
- (ii) Transparent noise barriers shall be supported by vertical posts and bottom rail only and a top rail shall not be permitted.
- (iii) The parapet detail on the bridge shall continue round the radii at the ends of the bridge and shall integrate with adjacent boundary fencing / walls / barriers to Approved details.
- (iv) A pedestrian guardrail shall be provided between the south footpath / cyclepath and the carriageway on the overbridge.
- (v) All the other Requirements of Section 2.7.18 shall apply to this structure.

### **3.7 Structure RW01 – Milltimber Retaining Wall**

3.7.1 The Design for Structure RW01 shall ensure compliance with the following:

- (i) The retaining wall shall be positioned at the top of the AWPR cutting a minimum of 3.0m away from the existing property boundary.
- (ii) The exposed height of the wall shall not exceed 3.5m.
- (iii) The exposed concrete face shall have a finish as defined in Section 2.8.5.
- (iv) Landscape planting shall be provided in front of the wall to screen the wall from the AWPR.

### **3.8 Structure RW02 – Kippie Lodge Retaining Wall**

3.8.1 The Design for Structure RW02 shall ensure compliance with the following:

- (i) The wall shall follow the line of the existing property boundary with a grassed slope between the exposed face of the wall and the back of the verge.
- (ii) The wall shall have a stone masonry facing over its full exposed height. The stone masonry facing shall be constructed in accordance with BS 5628 and SHW Series 2400. The colour, size and shape, type and texture of the stones used shall match that of stone masonry walls in the local area. Stones shall be laid in a random rubble arrangement of either coursed or un-coursed construction to match that of stone masonry walls in the local area.

### **3.9 Structure PS21 – C127K Wester Ord to Blacktop Road Underbridge**

3.9.1 The Design for Structure PS21 shall ensure compliance with the following:

- (i) Bridge parapets of concrete construction shall be permitted and shall take the form defined on drawing B1033200/CD/DEF/ST/010.

### **3.10 Structure PS33 – North Kingswells Junction Underbridge**

3.10.1 The design for Structure PS33 shall ensure compliance with the following:

- (i) The use of full height abutments shall be permitted for this structure.



### **3.11 Structure PS38 – BP Pipeline Protection Structure**

- 3.11.1 The Design for Structure PS38 shall ensure compliance with the following:
- (i) The Company shall consult and comply with the requirements of BP.
  - (ii) The Company shall consider the effects of any adjacent cathodic protection systems in the BP apparatus on the structure and shall ensure that suitable measures are provided to prevent accelerated corrosion of the New Works structural elements.
  - (iii) Bridge parapets of concrete construction shall be permitted and shall take the form defined on drawing B1033200/CD/DEF/ST/010.
  - (iv) A bituminous footway construction, for New Access Road/Tracks and Accommodation Works Access Tracks as detailed in Schedule 2 Part 2 of this Agreement, shall be provided through the structure.

### **3.12 Structure PS39 – Shell Pipeline Protection and NMU Underpass**

- 3.12.1 The Design for Structure PS39 shall ensure compliance with the following:
- (i) The Company shall consult and comply with the requirements of Shell.
  - (ii) The Company shall consider the effects of any adjacent cathodic protection systems in the Shell apparatus on the structure and shall ensure that suitable measures are provided to prevent accelerated corrosion of the structural elements. .
  - (iii) The wingwalls shall be parallel to the road above.
  - (iv) Bridge parapets of concrete construction shall be permitted and shall take the form defined on drawing B1033200/CD/DEF/ST/010.
  - (v) A bituminous footway construction, for New Access Road/Tracks and Accommodation Works Access Tracks as detailed in Schedule 2 Part 2 of this Agreement, shall be provided through the structure. The footway material shall be a light silver grey granite colour.

### **3.13 Structure PS40 – Kirkhill Wildlife Overbridge**

- 3.13.1 The Design for Structure PS40 shall ensure compliance with the following:
- (i) The form of the structure shall adopt one of the acceptable Overbridge forms described in Section 2.7.18.2.
  - (ii) The plan arrangement of the landscaping shall be one of the acceptable plan arrangements shown on drawing B1033200/CD/DEF/ST/005.
  - (iii) The arrangement of the landscaping shall be one that provides a meandering pathway across the bridge by varying the profile of the topsoil across the bridge.
  - (iv) Below the topsoil a suitable arrangement shall be provided to maintain the growth of the landscaping. Below this, a root barrier system is required to protect the waterproofing membrane and structure.
  - (v) Hardened outer verges 0.6m wide shall be provided between the edges of the landscaping and the bridge parapets.
  - (vi) The bridge parapets shall be 1800mm high with solid infill panels 800mm high at the base with an open appearance above with mesh infill complying

with Section 2.6.8. Parapets shall extend at least two panels or six metres, whichever is the greater, beyond the top of the slope intersecting line.

### **3.14 Structure PS41 – Kirkhill Overbridge**

3.14.1 The Design for Structure PS41 shall ensure compliance with the following:

- (i) The form of the structure shall adopt one of the acceptable Overbridge forms described in Section 2.7.18.2.
- (ii) The structure shall be landscaped as per drawing B1033200/CD/DEF/ST/005.
- (iii) The arrangement of the landscaping shall be one that provides a meandering pathway across the bridge by varying the profile of the topsoil across the bridge.
- (iv) Below the topsoil a suitable arrangement shall be provided to maintain the growth of the landscaping. Below this, a root barrier system is required to protect the waterproofing membrane and structure.
- (v) The bridge parapets shall be 1800mm high with solid infill panels 800mm high at the base with an open appearance above with mesh infill complying with Section 2.6.8. Parapets shall extend at least two panels or six metres, whichever is the greater, beyond the top of the slope intersecting line

### **3.15 Structure PS41A – Bogenjoss Burn Underbridge**

3.15.1 The Design for Structure PS41A shall ensure compliance with the following:

- (i) The Company shall consult and comply with the requirements of SNH to ensure that the form of the structure allows sufficient ecological connectivity below the bridge.

### **3.16 Structure PS43 – Shell Pipeline Protection and Farm Underpass**

3.16.1 The Design for Structure PS43 shall ensure compliance with the following:

- (i) The Company shall consult and comply with the requirements of Shell.
- (ii) The Company shall consider the effects of any adjacent cathodic protection systems in the Shell apparatus on the structure and shall ensure that suitable measures are provided to prevent accelerated corrosion of the structural elements.
- (iii) The embankment between PS43 - Shell Pipeline Protection and Farm Underpass and PS44 - C55C Pitmedden Road Underbridge on the south side of the AWPR shall be retained in the design and appropriately landscaped.
- (iv) The wingwalls shall be parallel to the road over with the exception of the south west and north west wing walls. The north west wingwall shall continue to the edge of the farm access track and shall retain landscaped earthworks to provide visual screening to the structure. The farm access track shall be positioned as close to Pitmedden Road as possible.
- (v) Bridge parapets of concrete construction shall be permitted and shall take the form defined on drawing B1033200/CD/DEF/ST/010.

- (vi) A bituminous footway construction, for New Access Road/Tracks and Accommodation Works Access Tracks as detailed in Schedule 2 Part 2 of this Agreement, shall be provided through the structure and shall extend for a distance of 5 metres from the structure opening.
- (vii) The requirements of clause 2.12.2.21 a) shall not be applied to this Structure.

### **3.17 Structure PS44 – C55C Pitmedden Road Underbridge**

3.17.1 The Design for Structure PS44 shall ensure compliance with the following:

- (i) Bridge parapets of concrete construction shall be permitted and shall take the form defined on drawing B1033200/CD/DEF/ST/010.
- (ii) The slope and stone masonry apron beneath the structure shall be shaped locally at a gradient no steeper than 1v:2h at the north west corner of the structure such that the apron does not extend beyond the plan area of the deck above.

### **3.18 Structure PS45 – Aberdeen to Inverness Railway Underbridge**

3.18.1 The Design for Structure PS45 shall ensure compliance with the following:

- (i) The Company shall consult and comply with the requirements of Network Rail.
- (ii) Provision is to be made in the structure design for a future double track electrified railway, as directed by Network Rail.
- (iii) Bridge parapets of concrete construction shall be permitted and shall take the form defined on drawing B1033200/CD/DEF/ST/010.

### **3.19 Structure PS46 – River Don Crossing**

3.19.1 The design for Structure PS46 shall ensure compliance with the following:

- (i) The structure shall either take the form of a 5-span structure as defined in drawings B1033200/CD/DEF/ST/011, B1033200/CD/DEF/ST/012, B1033200/CD/DEF/ST/013 and B1033200/CD/DEF/ST/014 or a 3-span structure as defined in drawings B1033200/CD/DEF/ST/015, B1033200/CD/DEF/ST/016, B1033200/CD/DEF/ST/017, B1033200/CD/DEF/ST/023 and B1033200/CD/DEF/ST/024.
- (ii) The superstructure shall be of concrete construction.
- (iii) The parapets shall be H4a containment and shall be open steel post and rail type.
- (iv) Stainless steel reinforcement shall be provided in the parapet cope over the full length of the structure to remove the requirement for this area to be impregnated in accordance with the requirements of BD 43 of the DMRB.
- (v) The underside and inclined faces of the box and cantilever soffits of the central span between pier centres shall be excluded from the requirement to be impregnated in accordance with the requirements of BD 43 of the DMRB.
- (vi) The Company shall consider the effects of any adjacent cathodic protection systems in the BP apparatus on the structure and shall ensure

that suitable measures are provided to prevent accelerated corrosion of the structural elements.

### **3.20 Structure PS49 – Parkhill Aqueduct**

3.20.1 The Design for Structure PS49 shall ensure compliance with the following:

- (i) The Company shall consult and comply with the requirements of Historic Scotland.
- (ii) The structure shall take the form defined in drawing B1033200/CD/DEF/ST/018.
- (iii) The requirements of Section 2.7.6 do not apply to this structure.
- (iv) The structure shall be designed as a 'lightweight structure' in accordance with Eurocodes.
- (v) Suitable detailing and waterproofing shall be provided to prevent leakage from the water channel.
- (vi) Parapets shall extend at least two panels or six metres, whichever is the greater, beyond the top of the slope intersecting line

### **3.21 Structure PS52 – Formartine and Buchan Way NMU Underpass 1 (A947)**

3.21.1 The Design for Structure PS52 shall ensure compliance with the following:

- (i) The structure shall make provision for the re-opening of the disused railway as a single track electrified railway with NMU provision.
- (ii) Retaining walls with stone masonry facing shall be provided at the entrances to the structure in the arrangement defined on drawing B1033200/CD/DEF/ST/019. The stone masonry facing to the external retaining walls shall continue as stone masonry facing to the internal abutment walls 2.3m in height for the full length of the underpass. The stone masonry facing shall be constructed in accordance with BS 5628 and SHW Series 2400. The colour, size and shape, type and texture of the stones used shall match that of stone masonry walls in the local area. Stones shall be laid in a random rubble arrangement of either coursed or un-coursed construction to match that of stone masonry walls in the local area.
- (iii) The remaining exposed areas of concrete to the abutments and wingwalls shall be finished in accordance with Sections 2.8.5 and 2.8.6.
- (iv) Lighting shall be by means of uplighter luminaries positioned at ground level and at the top of the internal stone masonry facing.
- (v) The footway finish through the underpass shall be a light silver grey granite colour. Light silver grey granite colour gravel chippings shall be provided between footways and in the verges.
- (vi) The Company shall consult and comply with Aberdeenshire Council on the lighting and footway make-up requirements.

### **3.22 Structure PS55 – Formartine and Buchan Way NMU Underpass 2 (A90)**

3.22.1 The Design for Structure PS55 shall ensure compliance with the following:

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- (i) The structure shall make provision for the re-opening of the disused railway as a single track electrified railway with NMU provision.
- (ii) Retaining walls with stone masonry facing shall be provided at the entrances to the structure in the arrangement defined on drawing B1033200/CD/DEF/ST/020. The stone masonry facing to the external retaining walls shall continue as stone masonry facing to the internal abutment walls 2.3m in height for the full length of the underpass. The stone masonry facing shall be constructed in accordance with BS 5628 and SHW Series 2400. The colour, size and shape, type and texture of the stones used shall match that of stone masonry walls in the local area. Stones shall be laid in a random rubble arrangement of either coursed or un-coursed construction to match that of stone masonry walls in the local area.
- (iii) The remaining exposed areas of concrete to the abutments and wingwalls shall be finished in accordance with Sections 2.8.5 and 2.8.6.
- (iv) Lighting shall be by means of uplighter luminaires positioned at ground level and at the top of the internal stone masonry facing.
- (v) The footway finish through the underpass shall be a light silver grey granite colour. Light silver grey granite colour gravel chippings shall be provided between footways and in the verges.
- (vi) The Company shall consult and comply with Aberdeenshire Council on the footway make-up requirements.

**3.23 Structure PS58 – Lochgreens Access Road Overbridge**

3.23.1 The design for Structure PS58 shall ensure compliance with the following:

- (i) If intermediate pier columns are used for this structure they shall have a minimum distance of 2.5m between centres.

**3.24 Structure PS63 – Blameddie Junction Underbridge**

3.24.1 The design for Structure PS63 shall ensure compliance with the following:

- (i) The use of full height abutments shall be permitted for this structure.
- (ii) The wing walls for this structure may be parallel to the road over or splayed at 45 degrees.

**3.25 Structure PS64 – Kier Farm Underpass**

3.25.1 The design for Structure PS64 shall ensure compliance with the following:

- (i) The wing walls for this structure may be parallel to the road over or splayed at 45 degrees.
- (ii) The structure shall be treated as a farm underpass with respect to clause 2.12.2.21.

**3.26 Structure PS65 – South Orrock Farm Underpass**

3.26.1 The design for Structure PS65 shall ensure compliance with the following:

- (i) The wing walls for this structure may be parallel to the road over or splayed at 45 degrees.
- (ii) The structure shall be treated as a farm underpass with respect to clause 2.12.2.21.

### **3.27 Structure PS66 – Orrock Road Overbridge**

3.27.1 The design for Structure PS66 shall ensure compliance with the following:

- (i) The design of the structure shall make provision for the future widening of the carriageway over the structure from 5.5m to 7.3m wide. The widening of the carriageway shall be achieved by a reduction in both verge widths from 2.9m to 2.0m.

### **3.28 Structure PS67 – Dabrae Farm Underpass**

3.28.1 The design for Structure PS67 shall ensure compliance with the following:

- (i) The wing walls for this structure may be parallel to the road over or splayed at 45 degrees.

### **3.29 Structure PS68 – Aikenshill Farm Underpass**

3.29.1 The design for Structure PS68 shall ensure compliance with the following:

- (i) The wing walls for this structure may be parallel to the road over or splayed at 45 degrees.
- (ii) The structure shall be treated as a farm underpass with respect to clause 2.12.2.21.

### **3.30 Structure PS69A – Foveran Burn Underbridge**

3.30.1 The design for Structure PS69A shall ensure compliance with the following:

- (i) The wing walls for this structure may be parallel to the road over or splayed at 45 degrees.

### **3.31 Structure PS73 – Shell Pipeline Crossing Mainline**

3.31.1 The design for Structure PS73 shall ensure compliance with the following:

- (i) The Company shall consult and comply with the requirements of Shell.
- (ii) The Company shall consider the effects of any adjacent cathodic protection systems in the BP apparatus on the structure and shall ensure that suitable measures are provided to prevent accelerated corrosion of the structural elements.

### **3.32 Structure PS74 – Shell Pipeline Crossing Access Track**

3.32.1 The design for Structure PS74 shall ensure compliance with the following:

- (i) The Company shall consult and comply with the requirements of Shell.
- (ii) The Company shall consider the effects of any adjacent cathodic protection systems in the BP apparatus on the structure and shall ensure

that suitable measures are provided to prevent accelerated corrosion of the structural elements.

### **3.33 Structure PS75 – BP Pipeline Crossing Bridgend Access**

3.33.1 The design for Structure PS75 shall ensure compliance with the following:

- (i) The Company shall consult and comply with the requirements of BP.
- (ii) The Company shall consider the effects of any adjacent cathodic protection systems in the BP apparatus on the structure and shall ensure that suitable measures are provided to prevent accelerated corrosion of the structural elements.

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## Part 2 Specific Requirements

**5 Settlement****5.1 Design**

- 5.1.1 The Design shall pay due regard to the effects of settlement or heave.
- 5.1.2 Measures shall require to be taken by the Company to ensure that settlement and heave of embankments shall either be prevented or shall be substantially complete before the road pavement shall have been constructed. The Company shall demonstrate to the Contracting Authority's satisfaction that settlement of the founding stratum is substantially complete before the road pavement is constructed.
- 5.1.3 The following criteria shall apply:
- (i) Within 10 metres of the interface between Structures and adjacent embankments, the differential settlement or heave between any two points at any time within 60 months of Final Completion shall be no greater than;
    - (a) For any two points less than 1 metre apart, 5 millimetres;
    - (b) For any two points greater than 1 metre but less than 3 metres apart, 10 millimetres;
    - (c) For any two points greater than 3 metres but less than 6 metres apart, 15 millimetres;
    - (d) For any two points greater than 6 metres but less than 8 metres apart, 20 millimetres; and
    - (e) For any two points greater than 8 metres apart, 25 millimetres.
- 5.1.4 Over a distance of 50 metres back from any Structure the maximum permitted change in gradient, from the Design gradient monitored in accordance with Section 5.2 shall be 0.1 percent.
- 5.1.5 Where new construction imposes loads on existing embankments, pavements or Structures, appropriate measures shall be taken by the Company to prevent differential settlement or damage.
- 5.1.6 Differential settlements which adversely affect carriageway drainage shall not be acceptable in the New Works.
- 5.1.7 Notwithstanding the other provisions of this Section at any time within 60 months of Final Completion, the maximum permitted change in gradient from the Design gradient shall be 0.5 percent except for Accommodation Works Access Tracks where the maximum permitted change in gradient from the Design Gradient shall be 1.0 percent.
- 5.1.8 For the purposes of analysis the gradient shall be calculated using surveyed levels of the adjacent equally spaced control points.

**5.2 Instrumentation**

- 5.2.1 To monitor the settlement control points shall be attached to the pavement by the Company and levelled by them immediately after construction of the pavement and thereafter monthly for an initial period of six months.

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The Company shall continue to monitor settlement on a monthly basis until such time as settlement trends have been established and significant movements have ceased.

- 5.2.2 The control points shall be installed at the following locations, referenced to Ordnance Survey datum, and appropriate Design chainages:
- (i) all embankments of height greater than 3 metres: control points shall be installed in the pavement at 10 metre intervals on both edges of the carriageway and on the centreline;
  - (ii) within 10 metres of the interface between Structures and approach embankments: control points shall be installed in the pavement at 10 metres intervals on both edges of the carriageway and on the centre line;
  - (iii) behind Structures: control points shall be installed in the pavement at 5 metre intervals on both edges of the carriageway and on the centre line, over a distance of 50 metres.
  - (iv) where new construction crosses ground where ground improvement has been carried out: control points shall be installed in the pavement at five metre intervals on both edges of the carriageway and on the centre line, over a distance of the ground improvement works plus 50 metres.
  - (v) where new construction incorporates soil reinforcement, including geogrid: control points shall be installed in the pavement at five metre intervals on both edges of the carriageway and on the centre line, over a distance of the soil reinforcement works plus 50 metres.
- 5.2.3 The centreline control points shall be levelled until the carriageway is opened, and thereafter only when the edge control points indicate significant level changes, or as otherwise directed by the Contracting Authority.
- 5.2.4 The Company shall submit to the Contracting Authority the results of the monitoring within one week of the measurements having been taken.
- 5.2.5 Notwithstanding the requirements of paragraph 5.2.1, the Company shall take all measures to identify the area over which any remedial measures are required due to unacceptable differential settlements.
- 5.2.6 To demonstrate substantial completion of the founding stratum prior to construction of the road pavement, the Company shall install and monitor control points on earthworks at equivalent locations to those noted in paragraph 5.2.2.

## **6 Environment, Landscape and Ecology**

### **6.1 Design and Mitigation: General**

- 6.1.1 The Company shall ensure that the New Works are designed and constructed to mitigate and/or minimise adverse environmental impacts such that in the opinion of the Contracting Authority they are clearly and demonstrably not greater than those identified in the Environmental Assessment Documents contained in Schedule 8 to the Agreement
- 6.1.2 The Environmental Assessment Documents contained in Schedule 8 to the Agreement also include background surveys, reports and assessments which the Company shall take full account of in the Design, construction and completion of the New Works.
- 6.1.3 Subject to the other provisions of this Agreement, the Design shall include environmental, landscape and ecology mitigation measures in accordance with these New Works Requirements. In carrying out the Design, construction and completion of the New Works the Company shall note that the documents which form the Environmental Assessment Documents have been produced over a period of time in response to a particular highway design and policy current at the time of publication, and in response to additional information becoming available. The requirements in the Environmental Assessment Documents may not therefore satisfy current best practice. In the event of a conflict between the Environmental Assessment Documents and this Part 2 of these New Works Requirements, the New Works Requirements shall prevail.
- 6.1.4 The Company shall employ suitably qualified and experienced specialist environmental personnel to undertake all necessary environmental activities. These activities shall include, but not be limited to:
- (i) Coordination of environmental issues associated with all aspects of the Design, construction and completion of the New Works;
  - (ii) Integration of environmental Design and environmental mitigation measures as appropriate in the Design, construction and completion of the New Works, including preparation of method statements for construction works; and
  - (iii) Undertaking consultation with statutory and non-statutory consultees as appropriate in respect of environmental issues related to the Design, construction and completion of the New Works.

### **6.2 Design and Mitigation: Methodologies**

- 6.2.1 The Design shall ensure that all measures shall be taken to protect the environment and control pollution in accordance with all statutory requirements and those of this Agreement. Environmental mitigation measures and the landscape Design shall be in accordance with Legislation and current good practice guidelines within Scotland.

### **6.3 Environmental Liaison Group (“ELG”)**

- 6.3.1 The Company shall form an Environmental Liaison Group (“ELG”) for the project which shall include representatives from the Contracting Authority, SNH, SEPA, Historic Scotland, Aberdeen City Council, Aberdeenshire Council and other relevant

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organisations. The Company shall advise the members of the ELG as to future construction activities and compliance with Environmental Assessment Documents. The Contracting Authority shall chair the meetings and the ELG shall meet at monthly intervals as a minimum, with more frequent meetings being held as required to discuss specific issues.

- 6.3.2 The Company shall prepare the agenda for the ELG meetings, which shall be submitted to the Contracting Authority for approval at least seven days prior to the ELG meeting taking place.
- 6.3.3 The Company shall supply formal minutes of all discussions and actions arising from the ELG meetings, for agreement with Contracting Authority, within 48 hours of the relevant meeting having taken place. The Company shall issue a copy of the agreed minutes to the ELG for review at its next meeting.

## **6.4 Cultural Heritage**

- 6.4.1 The Company shall consult and comply with the requirements of Historic Scotland in respect of any sites of archaeological interest or archaeological remains which are likely to be affected by the New Works, including the landscape Design.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

Contacts:

[REDACTED], Cultural Resources Advisor, Historic Scotland, Longmore House, Room G1, Salisbury Place, Edinburgh EH9 1SH

Email: [REDACTED]

Tel: [REDACTED]

[REDACTED], Senior Archaeology Manager, Historic Scotland, Longmore House, Room G1, Salisbury Place, Edinburgh EH9 1SH

Email: [REDACTED]

Tel: [REDACTED]

- 6.4.2 The Company shall take due cognisance in the Design, construction and completion of the New Works with respect to minimising disturbance to cultural heritage interests in accordance with these New Works Requirements and the Environmental Assessment Documents.
- 6.4.3 The Company shall ensure that scheduled monuments, listed buildings, and archaeological sites and any other sites of archaeological interest or archaeological remains identified as requiring protection by Historic Scotland within the vicinity of the New Works Site shall not be adversely affected by the Design, construction and completion of the New Works without written consent from Historic Scotland.
- 6.4.4 The Company shall undertake an archaeological watching brief and all archaeological works relating to the New Works including but not limited to, fieldwork, post-excavation work, mitigation design and implementation, reporting, archiving and publication.

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- 6.4.5 The archaeological watching brief shall be undertaken during the removal of topsoil, soil or any other overburden which may obscure archaeological remains within the New Works Site.
- 6.4.6 The purpose of the archaeological watching brief shall be to investigate and record any archaeological remains encountered.
- 6.4.7 In the event of archaeological remains being discovered during the archaeological watching brief, or at any other time during the New Works, the Company shall cease the stripping of topsoil, soil or any other overburden and otherwise or excavation work or construction work in the vicinity, erect temporary fencing around the remains, and immediately inform the Contracting Authority and Historic Scotland.
- 6.4.8 The Company shall not carry out any further works within the fenced off area until written approval to do so has been given by Historic Scotland.
- 6.4.9 Any features of possible archaeological interest discovered during the archaeological watching brief or at any other time during the New Works shall be recorded in accordance with Institute for Field Archaeologists and Historic Scotland guidelines.
- 6.4.10 Where the need for archaeological mitigation measures is identified, the Company shall submit a mitigation proposal report to the Contracting Authority and Historic Scotland detailing the mitigation proposed.
- 6.4.11 Following written agreement of such with the Contracting Authority and Historic Scotland, the Company shall undertake all mitigation measures in accordance with the requirements of Historic Scotland, including inter alia the storage of archaeological finds. The upright stones at Kirkhill and Overhill shall be relocated prior to site clearance in consultation with the Contracting Authority and Historic Scotland.
- 6.4.12 On completion of all fieldwork, the Company shall submit a brief report to Discovery and Excavation in Scotland (DES) and prepare a post-excavation assessment report. The post-excavation assessment report shall include proposals for specialist analysis, processing, conservation, storage of finds and samples and reporting.
- 6.4.13 Within twelve months of receiving written agreement from Historic Scotland for the post-excavation report the Company shall undertake specialist analysis, processing, conservation, storage of finds, samples and reporting.
- 6.4.14 The Company shall prepare a final report detailing the results of all archaeological works undertaken including all specialist reporting, post excavation analysis and conclusions shall be produced. If required the Company shall submit a separate report suitable for publication in an appropriate archaeological journal or series.
- 6.4.15 The Company shall submit a digital copy of all final and specialist reports to the National Monuments Record of Scotland within 12 months of their acceptance by Historic Scotland.
- 6.4.16 The Company shall, as soon as possible after the completion of all reporting prepare an archive and procure the deposition and long-term storage of each archive in the National Monuments Record of Scotland (NMRS).

## 6.5 Ecology and Nature Conservation

6.5.1 The Company shall implement all ecological mitigation measures identified in the Environmental Assessment Documents contained in Schedule 8 of the Agreement and as required under protected species licence conditions.

6.5.2 The Company shall consult and comply with the requirements of Scottish Natural Heritage in respect of any species or sites protected by legislation, protected species licences or scheduled for protection which are likely to be affected by the New Works, including any hard and soft landscaping.

Contact: [REDACTED]

SNH Stirling

Beta Centre

Innovation Park

University of Stirling

FK9 4NF

Direct Dial [REDACTED]

[REDACTED]@snh.gov.uk

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement and shall comply with the conditions of all current licences which relate to protected species.

6.5.3 The Company shall obtain all necessary licences required in relation to species protected by legislation.

6.5.4 The Company shall be responsible for ensuring that all legislation with regard to ecology and nature conservation is strictly adhered to.

6.5.5 Before the commencement of any New Works the Company shall consult and comply with Scottish Natural Heritage and shall carry out surveys of plants and animals protected by legislation, which may be directly or indirectly affected by the New Works, in accordance with their requirements.

6.5.6 The Company shall consult and comply with Scottish Natural Heritage and shall carry out surveys for invasive plants which may directly or indirectly affected the New Works.

6.5.7 The surveys shall be undertaken by suitably qualified and experienced specialists.

6.5.8 Where surveys indicate that mitigation measures, in addition to those identified in the Environmental Assessment Documents or as part of protected species licensing conditions, are required, these shall be agreed with Scottish Natural Heritage. The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

6.5.9 Following the surveys detailed in paragraphs 6.5.5 and 6.5.6 ,the Company shall provide the Contracting Authority with details of their proposals for mitigation measures which may include, but shall not be limited to:

- (i) protection during construction of features of ecological interest;

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- (ii) wildlife fencing, tunnels, mammal ledges in culverts or one-way gates to allow the passage of mammals including, but not limited to, badgers and otters;
  - (iii) fencing to direct fauna towards tunnels at appropriate hazardous road crossing points;
  - (iv) wildlife habitat creation, enhancement and management; and
  - (v) a programme of post works monitoring of protected species and mitigation.
- 6.5.10 If Scottish Natural Heritage requires that certain habitats and species are protected during New Works construction, the Company shall design and programme the New Works so that disturbance to the habitat of those species is avoided.
- In addition:
- (i) The Company's Construction Programme shall clearly indicate the programmed time for removal of existing vegetation and areas to be removed; and
  - (ii) the Company shall take due cognisance in the Design, construction and programming of the New Works with respect to minimising disturbance to wildlife and wildlife habitat. Particular attention shall be given to the protection of existing areas of semi-natural vegetation.
- 6.5.11 Where required by Scottish Natural Heritage the Design shall include, but shall not be limited to:
- (i) Culverts designed to allow the free passage of mammals and/or fish; and
  - (ii) Additional dry pipe crossings in locations and to layouts which shall encourage their use by mammals as far as is reasonably possible.
- 6.5.12 The Design shall include ecological impact mitigation and habitat creation associated with riparian corridors affected by the proposals.
- 6.5.13 Bats
- The Company shall take due cognisance in the Design, construction and completion of the New Works with respect to avoiding significant negative impacts on local roosting bat populations.
- 6.5.14 Badgers
- The Company shall take due cognisance in the Design, construction and completion of the New Works with respect to avoiding disturbance to badger setts and significant negative impacts on local badger populations.
- 6.5.15 Red Squirrels
- The Company shall take due cognisance in the Design, construction and completion of the New Works with respect to avoiding disturbance to red squirrel dreys and significant negative impacts on local red squirrel populations.
- 6.5.16 Pine Martens
- The Company shall take due cognisance in the Design, construction and completion of the New Works with respect to avoiding disturbance to pine marten nests or dens and significant negative impacts on local pine marten populations.



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## 6.5.17 Otters

The Company shall take due cognisance in the Design, construction and completion of the New Works with respect to avoiding disturbance to otter holts and significant negative impacts on local otter populations. The Company shall also comply with the requirements of paragraph 1.3.4 (ii) of this Part 2 in respect of fencing requirements around SUDS storage, attenuation or settlements ponds.

## 6.5.18 Water Voles

The Company shall take due cognisance in the Design, construction and completion of the New Works with respect to avoiding disturbance to water voles, their habitat and significant negative impacts on local water vole populations.

The Company shall ensure that water vole habitat areas created as mitigation under advanced works contracts are not impacted by the New Works.

## 6.5.19 Breeding Birds

The Design, construction and completion of the New Works shall include the protection of birds during the breeding season which is typically between March 1st and August 31st but in some instances may vary.

## 6.5.20 Amphibians

The Company shall take due cognisance in the Design, construction and completion of the New Works with respect to avoiding impact on amphibians including, but not limited to great crested newts. The Design of the storage, attenuation or settlement ponds and otherwise and modification of watercourses shall take into account habitat requirements of amphibians.

The Company shall ensure that ponds created as mitigation under advanced works contracts are not impacted by the New Works.

## 6.5.21 Reptiles

The Company shall take due cognisance in the Design, construction and completion of the New Works with respect to avoiding impact on reptiles and significant negative impacts on local reptile populations.

## 6.5.22 Freshwater pearl mussels

The Company shall take due cognisance in the Design, construction and completion of the New Works with respect to avoiding disturbance to freshwater pearl mussels, their habitat and significant negative impacts on their populations.

## 6.5.23 Fish and Freshwater Habitat

The Company shall take due cognisance in the Design, construction and completion of the New Works with respect to avoiding disturbance to fish, including Atlantic salmon, and freshwater habitat.

## 6.5.24 River Dee Special Area of Conservation (SAC)

The Company shall take due cognisance in the Design, construction and completion of the New Works with respect to the designation of the River Dee and certain of its tributaries as a SAC. The Company shall undertake works within the environs of the SAC in strict compliance with the requirements of:

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- (i) the Appropriate Assessment undertaken in respect of the implications of the proposed Aberdeen Western Peripheral Route (AWPR) upon the River Dee Special Area of Conservation (SAC);
- (ii) the advice provided by Scottish Natural Heritage (SNH) to Transport Scotland in its letter dated 8th August 2008, and as a written submission dated 12<sup>th</sup> August 2008 to the Public Local Inquiry held in respect of the Aberdeen Western Peripheral Route; and
- (iii) the Report to Inform an Appropriate Assessment for the River Dee SAC.

**6.6 Air Quality and Dust**

6.6.1 The Company shall consult and comply with the requirements of Aberdeen City Council Environmental Health Officer (Contact Tel: 01224 523737) and Aberdeenshire Council Environmental Health Officer (Contact Tel: 08456 081207) as appropriate, with respect to air quality and dust emissions.

6.6.2 The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

6.6.3 The Design shall ensure that all necessary measures shall be implemented to reduce airborne dust levels as far as is possible and to prevent damage, loss, injury or nuisance caused by dust at all times during the construction and completion of the New Works.

6.6.4 Such measures may include but shall not be restricted to:

- (i) use of water sprays;
- (ii) sheeting of vehicles carrying material which may give rise to wind blown dust;
- (iii) enforcement of speed limits on haul roads and unmade roads;
- (iv) avoiding dust generating activities in conditions likely to cause nuisance;
- (v) provision of windbreaks where appropriate;
- (vi) minimising drop heights;
- (vii) switching off machinery not in use;
- (viii) equipment and internal road maintenance;
- (ix) control of stockpiled materials;
- (x) planting over stored materials where appropriate; and
- (xi) avoiding/preventing build-up of mud on roads by measures such as wheel washing.

6.6.5 Notwithstanding any other provisions of this Agreement, the Company shall produce method statements for handling dust and preventing dust spreading to adjacent communities during the construction of the New Works.

**6.7 Water Quality and Drainage**

6.7.1 The Company shall comply with the requirements of the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR).

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The Company shall consult and comply with the requirements of SEPA regarding water quality and drainage, including drainage outfalls, culverts, pollution control measures, flood prevention and the use of herbicides and other potentially polluting chemicals in proximity to watercourses.

Contact:

[REDACTED],  
SEPA – Aberdeen Office,  
Inverdee House,  
Baxter Street,  
Torry,  
Aberdeen, AB11 9QA

Tel: 01224 266 600

Fax: 01224 896 657

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

- 6.7.2 All culverts shall be designed in accordance with CIRIA Report C689 Culvert Design and Operation Guide (2010) and SEPA guidance Engineering in the Water Environment Good Practice Guide, River Crossings, 2<sup>nd</sup> edition (SEPA, 2010) and subject to the requirements of section 1.5.6 of this Part 2.
- 6.7.3 The design of all culverts on watercourses shall encourage use by wildlife such that all fish species and mammals associated with the watercourse may pass freely through the culvert. Culverts shall be designed to operate under sub-critical, free flow conditions. Bends, steps, changes in culvert slope and cross section shall not be permitted in the design of any culvert.
- 6.7.4 The Design shall minimise changes to the existing drainage patterns within the topography of the New Works Site.
- 6.7.5 Particular care shall be taken during construction and completion of the New Works over or adjacent to watercourses, channel habitats, and local drainage systems to ensure minimal disturbance to the banks and beds of watercourses, biological parameters including protected species and existing land drainage systems during, but not limited to, the construction of SUDS, culverts, watercourse crossings or diversions.
- 6.7.6 Subject to the other provisions of this Agreement, surface water runoff from all roads detailed in Table 1 of Schedule 19 of the Agreement, including associated cuttings and embankments, shall be carried to storage, attenuation or settlement ponds or otherwise, wherever possible.
- 6.7.7 The Design shall ensure that water tables shall be maintained, as far as possible, and shall not be artificially lowered, to ensure that the flora and fauna adjacent to the New Works Site shall not be adversely affected.
- 6.7.8 The Design shall ensure that all water (as defined in CAR) and other watercourses within and adjacent to the New Works Site are identified and monitored for quality of water, prior to any New Works and during construction and completion of the New Works. The Company shall consult with SEPA regarding water quality monitoring requirements.

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- 6.7.9 The Design shall ensure that the containment, treatment and disposal of surface water run-off from all roads detailed in Table 1 of Schedule 19 of the Agreement or groundwater produced by the New Works prevents any contaminants entering and polluting controlled waters (as defined in CAR) and the drainage system.
- 6.7.10 All detention basins, swales, trenches and the like shall be sized in accordance with CIRIA Report C697 The SUDS Manual in order to allow settlement for pollution removal purposes. The Company shall consult with SEPA regarding temporary and permanent SUDS provision.
- 6.7.11 The Design shall ensure that reasonable care shall be taken in the use and storage of potentially polluting chemicals and materials to minimise the risk of spillage or release into watercourses, ditches or surface drains.
- 6.7.12 The Design shall ensure that diversions for Undertakers and owners of private Apparatus shall be undertaken in a manner which shall minimise the risk of spillage or release into watercourses, ditches or surface drains.
- 6.7.13 Storage, attenuation or settlement ponds or otherwise, required as part of the road drainage system, shall:
- The Design shall ensure that all settlement, attenuation and storage ponds and otherwise shall
- (i) be designed to integrate with the surrounding landscape and provide habitat for wildlife;
  - (ii) be sited within naturally low lying areas and have surrounding earthworks with smooth flowing contours to integrate naturalistically with the surrounding landform, other than where SuDS ponds are specifically intended to provide a formal landscape feature;
  - (iii) avoid abrupt changes in slope, sharp angles and steep side slopes;
  - (iv) have fencing which shall be as unobtrusive as possible, with the fence type and alignment designed to minimise visual impact;
  - (v) have planting to help screen fencing, outfall and inlet structures, enhance wildlife habitat and provide visual interest;
  - (vi) have adjacent open ground around the storage, attenuation or settlement ponds or otherwise seeded with semi-natural vegetation/wildflowers to provide added wildlife habitat and visual interest; and
  - (vii) have ledges within ponds within the zone between 0m and 0.5 metres below average water level which shall be planted with native species emergent aquatic vegetation to provide wildlife habitat and visual interest and discourage public access to the water.
- 6.7.14 Outfalls to watercourses in the Works shall be designed in accordance with Engineering in the Water Environment Good Practice Guide, Intakes and outfalls (SEPA, 2008).
- 6.7.15 The Company shall ensure that run-off from any road shall not increase the risk of flooding downstream of the point of discharge.
- 6.7.16 The Company shall ensure that any excess runoff from the carriageway drainage shall be directed away from areas at risk of flooding towards areas of detention.

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6.7.17 Where structures or embankments are to be constructed within the floodplain, the Company shall consult and comply with the requirements of SEPA

## 6.8 Private Water Supplies (PWS)

6.8.1 A number of PWS have been recorded in the proximity of the New Works which have been subject to risk screening and assessment as summarised in Appendix N.

6.8.2 As a result of the screening processes a number of PWS have been identified which will or may be affected by the New Works. However the Company shall be aware that there may be other PWS which have not been recorded or that additional PWS have been identified that may be affected by the New Works.

6.8.3 The Company shall undertake the Design, construction and completion of the New Works so as to minimise the risk of impacts to existing PWS, so far as is practicable, both during construction and following Final Completion. Prior to commencing construction the Company shall update the screening of PWS in respect of their Design and identify any changes in mitigation measures required as a consequence of the updated screening.

6.8.4 The Company shall prepare a method statement in accordance with Appendix N to describe the procedures to be implemented to ensure that a water supply is maintained. The method statement shall be submitted prior to construction commencement for approval by the Contracting Authority and shall be incorporated into the Programme for the New Works.

6.8.5 Should any impact to PWS be identified the Company shall undertake all necessary mitigation measures identified through the screening processes as detailed in Appendix N. The mitigation measures comprise:

- (i) PWS which shall be connected to a public water mains supply
- (ii) PWS for which replacement shall be attempted;
- (iii) PWS for which monitoring shall be undertaken during and after construction of the New Works and, if permanently impacted, replacement shall be attempted; and
- (iv) PWS for which monitoring shall be undertaken during and after construction of the New Works and, if permanently impacted, the PWS shall be connected to a public water mains supply.

The Company shall allow for two attempts at PWS replacement to provide a suitable and sustainable PWS. The programme and locations for PWS replacement shall minimise the requirements for temporary water supplies and minimise disruption to landowners. Should replacement not provide a suitable and sustainable PWS as compared to the 12 month pre-construction monitoring, connection to a public water mains supply shall be undertaken by the Company.

6.8.6 The Company shall have regard to the current guidance and requirements where the Company is required to obtain CAR Licences.

6.8.7 Monitoring shall be carried out by others at a number of the PWS for a period of 12 months prior to construction. This data shall be made available to the Company on completion of this period of monitoring. The Company shall take account of any additional occupancy information provided by landowners, to complement consumption recorded in the monitoring results. This pre-construction monitoring

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- work shall include the installation of monitoring equipment for adoption and use by the Company.
- 6.8.8 The Company shall be responsible for undertaking further monitoring at relevant PWS locations and/or relevant ground investigation locations. The arrangements for further monitoring shall be subject to approval by the Contracting Authority. This monitoring shall include hydrogeological flow and hydrogeological water quality monitoring for the periods and at the minimum number of locations detailed in Appendix N as a minimum.
- 6.8.9 The monitoring shall comprise monthly site visits to each monitoring equipment installation to download recorded data, undertake in-situ water quality testing, recover samples for analytical testing in a UKAS accredited laboratory (appointed by the Company) and check that all equipment is functioning correctly. The Company shall provide monitoring data following each event in accordance with the requirements detailed in Appendix N.
- 6.8.10 The Company shall maintain monitoring of those existing and replacement PWS locations for a minimum period of 1 year post Final Completion of the New Works. The Company shall take account of groundwater intercepted during the construction of the New Works to inform the development of PWS monitoring requirements for post Final Completion of the New Works. Within one month of the completion of this monitoring period, the Company shall prepare and issue to the Contracting Authority for approval an interpretive report detailing all monitoring undertaken, any variances to the pre-construction conditions, and any changes to conditions monitored in advance of construction of the New Works.
- 6.8.11 The Company shall follow the relevant guidance including, but not limited to, that identified in Appendix N.
- 6.8.12 The Company shall protect or divert PWS pipe networks intercepted by the New Works in areas of embankment during the construction as detailed in Appendix N. The PWS diversion design shall maintain the supply requirements for each PWS system. The protection of PWS pipe networks shall also ensure long term protection against damage due to the weight of embankments causing distortion, leaking or collapse to such networks.
- 6.8.13 The effects of blasting on PWS shall be assessed and the Company shall produce method statements for the approval of the Contracting Authority prior to construction commencement to include measures to avoid damage to PWS by vibration effects and fracturing.
- 6.8.14 The Company shall decommission monitoring equipment, installed by others, on completion of the relevant monitoring period. The decommissioning programme shall be based on the monitoring requirements for each PWS. The decommissioned monitoring equipment shall be removed and suitably disposed of by the Company. The monitoring locations shall be reinstated to a suitable condition to reflect the surrounding ground conditions as agreed with landowners.

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**6.9 Hydrogeological and Hydrological Monitoring of Sensitive Environmental Sites (SES)**

- 6.9.1 The design of the New Works shall ensure that no adverse impact occurs as a result of the Design, construction and completion of the New Works to the following Sensitive Environmental Sites/ ecological sites:
- (i) Corby Loch and Lily Loch;
  - (ii) Hare Moss; and
  - (iii) Fishermyme Wetland.
- 6.9.2 Groundwater and surface water monitoring shall be carried out at the SES by others for a period of 12 months prior to construction. This data shall be made available to the Company on completion of this period of monitoring.
- 6.9.3 The design of the New Works shall ensure the continuation of groundwater and surface water monitoring in relation to these sites using previously installed monitoring equipment during the construction of the New Works and for a minimum 12 month period post Final Completion of the New Works in accordance with the requirements of Appendix P. Within one month of the completion of this monitoring period, the Company shall prepare and issue to the Contracting Authority for approval an interpretive report detailing all monitoring undertaken, any variances to the pre-construction conditions, and any changes to conditions monitored in advance of construction of the New Works.
- 6.9.4 Monitoring shall include continuous flow/ level monitoring and recording using dataloggers of surface water levels in open channels, water levels in lochs, groundwater levels in standpipes and rainfall in rain gauges. The monitoring shall also include water quality monitoring comprising field and analytical laboratory testing.
- 6.9.5 The Company shall provide a method statement that describes all activities, including but not limited to, monthly programming of site visits to each monitoring equipment installation to download recorded data, taking in-situ water quality testing and level readings, recovering water samples for analytical laboratory testing and checking that all equipment is functioning correctly. The method statement shall also include procedures to be implemented should the monitoring detect any adverse impact at any of the sites.
- 6.9.6 The Company shall decommission monitoring equipment, installed by others, on completion of the relevant monitoring period. The decommissioning programme shall be based on the monitoring requirements for each SES. The decommissioned monitoring equipment shall be removed and suitably disposed of by the Company. The monitoring locations shall be reinstated to a suitable condition to reflect the surrounding ground conditions as agreed with landowners.

**6.10 Groundwater**

- 6.10.1 The Company shall provide a method statement for monitoring groundwater for approval by the Contracting Authority. The method statement shall include a groundwater monitoring programme for the construction phase which shall:
- (i) Provide an overview of groundwater levels and quality along the full extent of the proposed scheme for the duration of the construction;

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- (ii) Provide local groundwater monitoring information on levels and quality in vicinity of identified PWS receptors; and
  - (iii) Provide local groundwater quality monitoring where potentially contaminated groundwater could be redirected as a result of road cuttings.
- 6.10.2 Groundwater monitoring instrumentation installed during the previous phases of ground investigation, outwith the footprint of the New Works, may be available for use in support of the requirements of 6.10.1. However, where this is not available, or is not suitable for monitoring purposes, the Company shall install new groundwater monitoring instrumentation in locations to be identified within the New Works area as part of the mitigation requirements as described in Clause 6.10.1.
- 6.10.3 The Company shall maintain and keep all groundwater monitoring instrumentation accessible throughout the execution and completion of the Works. Any instrumentation found to be damaged or defective shall be repaired or replaced by the Company as soon as practicable.
- 6.10.4 All boreholes with monitoring wells that are no longer required, including those in dry condition, shall be decommissioned by the Company in accordance with the requirements of the Water Environment (Controlled Activities) (Scotland) Regulations 2005 (CAR) and SEPA guidance on “Decommissioning Redundant Boreholes and Wells”.
- 6.10.5 The Company shall comply with all groundwater abstraction CAR Licence Terms and Conditions for road cuttings expected to intercept groundwater as listed in Schedule 8 of the Agreement

**6.11 Planning and Land Use**

- 6.11.1 The Company shall consult and comply with the requirements of:

- (i) Aberdeen City Council; and
- (ii) Aberdeenshire Council.

as appropriate in respect of planning policies and any statutory planning consents required in respect of the Design, construction and completion of the New Works. All other statutory or other approvals required in respect of the Design shall be complied with and obtained by the Company. The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

**6.12 Traffic Noise and Vibration**

- 6.12.1 The Company shall consult and comply with the requirements of Aberdeen City Council Environmental Health Officer (Contact Tel: 01224 523737) and Aberdeenshire Council Environmental Health Officer (Contact Tel: 08456 081207) with regard to construction noise levels.
- 6.12.2 The Company shall comply with the recommendations for practical measures to reduce noise set out in BS 5228 (all parts) and with Appendix 1/9 to the Specification.
- 6.12.3 The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.



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- 6.12.4 The Environmental Assessment Documents set out predicted noise levels due to road traffic both in the absence of mitigation and in the presence of mitigation measures. The Company shall provide noise mitigation measures which shall, as a minimum, provide the same beneficial effects at all affected receptor locations as the mitigation measures specified in the Environmental Assessment Documents.
- 6.12.5 The Company shall provide evidence to demonstrate the predicted effectiveness of its proposed noise mitigation measures prior to the commencement of construction of these elements in respect of the requirement specified in section 6.12.4.
- 6.12.6 A post construction noise assessment shall be undertaken by an appropriately qualified acoustician, appointed by the Company, who shall be a member of the Institute of Acoustics. This assessment shall be undertaken within three months of Final Completion. The assessment shall evaluate the actual effectiveness of the as constructed noise mitigation measures in providing beneficial effects at all affected receptor locations.
- 6.12.7 In the event that the effectiveness of the as constructed noise mitigation measures is found to be less than that predicted by the Company in accordance with section 6.12.5, the Company shall Design and construct suitable further noise mitigation measures to provide the level of benefit predicted in accordance with section 6.12.5.
- 6.12.8 The Company shall note that the required noise mitigation measures shall include those measures set out in the joint statement between Transport Scotland and Camphill Communities in relation to the Aberdeen Western Peripheral Route dated 21st January 2009.
- 6.12.9 The Design shall incorporate a noise barrier of appropriate design on each side of the road where it crosses Dambrae Underbridge, tapered into the false cuttings and noise barriers to the north and south of the structure.

**6.13 Landform and Grading Design Requirements****6.13.1 General**

- (i) As a minimum the landform and grading Design shall comply with the Indicative Landscape Design Drawings as listed in Appendix 0/4 to Part 4 of Schedule 2 of these New Works Requirements and be fully integrated with the planting Design, meet with the other landscape Design requirements contained in these New Works Requirements and shall be in accordance with the Environmental Assessment Documents.
- (ii) The landform design shall achieve integration with the surrounding local landscape to reduce adverse landscape and visual impacts as follows:
- (a) Grading out of side slopes to allow a smooth transition into the adjoining landforms, as indicated on the Indicative Landscape Design Drawings;
- (b) Creation of smooth flowing landforms which reflect the existing naturally occurring topography within the local landscape character area as identified in the Environmental Assessment Documents, in terms of gradients, scale and form;
- (c) Integration with existing ground levels, structures and planting;

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- (d) Creation of slope gradients which allow for re-establishment of suitable ground conditions where establishment of semi-natural vegetation is required by the Design;
  - (e) Creation of bunding and false cuttings for noise attenuation and to screen views of the roads as detailed in Section 6.14 and traffic from adjacent visual receptors; and
  - (f) Taking opportunities to grade out embankment and cutting slopes to more closely resemble the surrounding natural topography and allow return of land to agricultural use if required.
- (iii) The specific requirements for landform design and construction shall achieve the following:
- (a) Back slopes on false cuttings shall be generally not steeper than 1:4 using material excavated from the New Works;
  - (b) False cuttings shall have gently tapering end slopes no steeper than 1:7, subject to other provisions of these New Works Requirements;
  - (c) All other landscape earthworks shall generally be no steeper than 1:6;
  - (d) Where land may be returned to the landowner graded out slopes shall be prepared and seeded in accordance with the Indicative Landscape Design; and
  - (e) Where reinforced soil slopes are adopted in the Design hard facings shall not be permitted and the slopes shall be vegetated to minimise visual impact.
- (iv) The design of the New Works shall include the rounding off at the top and bottom of embankments and cuttings as specified in Section 1.6.

## 6.14 Earthworks Bunds / False Cuttings

- 6.14.1 Earthwork bunds/false cuttings shall be constructed as shown on the Indicative Landscape Design Drawings as listed in Appendix 0/4 to Part 4 of Schedule 2 within the Land Made Available by the Scottish Ministers for the New Works, to maximise the earthwork bunds' mitigating effects in terms of reducing noise and or visual impacts to the adjacent locations, including garden areas and the living space of houses.
- 6.14.2 Earthwork bunds/false cuttings shall be designed and constructed in accordance with HA65 of the DMRB.
- 6.14.3 Where the location, dimensions and slope gradients of earthworks bunds and false cuttings differ in the Final Design from those in the Indicative Design, the Company shall demonstrate that the Design fully meets the relevant landscape and visual mitigation commitments set out in the Environmental Assessment Documents. For Balmedie - Tipperty the dimensions for bunds and false cuttings shall be adhered to without variation in the Design to ensure that commitments given during scheme promotion statutory processes to balance visual, aesthetic and acoustic mitigation are delivered.

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**6.15 Additional Landform Integration**

- 6.15.1 In addition to the landform and grading Design shown on the Indicative Landscape Design Drawings the Company may also carry out additional landform Design through raising existing ground levels in the locations, shown on the Indicative Landscape Design drawings. Any such modifications shall meet the general requirements set out in section 6.13.1 (ii), (iii) and (iv).
- 6.15.2 The general requirements for landform Design shall achieve the following:
- (i) the creation of smooth flowing contours which reflect, and which are in character with the existing naturally occurring topography (within the local landscape character area as identified in the Environmental Assessment Documents) in terms of gradients, scale and form;
  - (ii) Integration with existing ground levels, structures and planting;
  - (iii) The tops and bottoms of embankments and cuttings in soft materials shall be rounded as specified in Section 1.6;
  - (iv) Creation of slope gradients which allow for re-establishment of suitable ground conditions where establishment of semi-natural vegetation is required by the Design;
  - (v) creation of bunding and false cuttings for noise attenuation and to screen views of the roads as detailed in Section 6.10 and traffic from adjacent visual receptors; and
  - (vi) All opportunities shall be taken to grade out embankment and cutting slopes to more closely resemble the surrounding natural topography and allow return of land to agricultural use if required.

**6.16 Rock Cuttings: Environmental Design Requirements**

- 6.16.1 Subject to the other provisions of the New Works Requirements new rock cuttings shall be formed to promote a natural appearance and natural regeneration, as far as possible, in line with ongoing slope stability.
- 6.16.2 Irrespective of the techniques used for excavation of rock cuttings, the design of the Works shall achieve aesthetic objectives which avoid or reduce adverse landscape and visual impacts as follows:
- (i) where it is necessary to safeguard the road against rock falls, consideration shall first be given to providing a wider verge. Rock traps shall be used where this is not possible. Netting of rock faces shall be avoided;
  - (ii) opportunities to exploit the discontinuities and character of the natural rock mass, incorporating ledges and niches so as to achieve as natural an appearance as possible, reflecting naturally occurring rock formations, strata and rugged terrain in the local area shall be considered;
  - (iii) regularly spaced 'half barrels' created by pre splitting of rock faces shall be removed where practicable to ensure an irregular naturalistic appearance; and
  - (iv) uniform smooth faces shall not be permitted except where they occur within the natural bedding planes in the rock.

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## 6.17 General Landscape Design Requirements

- 6.17.1 The objective of the landscape Design as shown on the Indicative Landscape Design Drawings as listed in Appendix 0/4 to Part 4 of these New Works Requirements is to provide integration of the New Works with the surrounding landscape and built environment together with any other mitigation measures identified in accordance with the Environmental Assessment Documents.
- 6.17.2 The overall landscape Design philosophy shall respond to, and reflect, the landscape through which the New Works pass.
- 6.17.3 The Company shall consult and comply with the requirements of the Specification and the Transport Scotland Landscape Advisor in connection with the overall landscape Design.
- 6.17.4 The Design shall ensure that:
- (i) the construction and establishment maintenance of the New Works comply with the landscape Design and management policy contained in Cost Effective Landscape Learning from Nature (the Scottish Office, 1998) (CEL:LfN);
  - (ii) adverse environmental impacts of all roads detailed in Table 1 of Schedule 19 of the Agreement, associated earthworks, bridges, culverts, retaining walls, other Structures, signs, barriers and lighting columns are minimised;
  - (iii) careful consideration shall be given to the location, orientation, scale, structural form, materials, finishes and colours in the Design of Structures;
  - (iv) adverse visual impacts shall be mitigated for the following viewers:
    - (a) Users of the existing roads;
    - (b) residents in all adjacent properties; and
    - (c) users of all adjacent public buildings, public open spaces, work places, footpaths, cycle routes and bridleways.
  - (v) adverse visual impact of lighting on the roads listed in Table 1 of Schedule 19 of the Agreement shall be minimised by limiting the lighting to the minimum necessary to comply with the Design criteria given in Section 1.19. In addition the road and pedestrian lighting provided shall be screened to prevent leakage and scatter of light rays;
  - (vi) all temporary works and construction areas, including, but not limited to compounds, haul routes, accesses, material stockpiles and otherwise, outside the area of the permanent works, shall be restored to their original condition, particularly in relation to soil cover, vegetation cover and hydrological condition;
  - (vii) existing vegetation shall be retained where practicable;
  - (viii) existing vegetation patterns shall be consolidated and enhanced;
  - (ix) the nature conservation value of existing habitats shall be enhanced and new habitat areas and corridors of nature conservation interest provided to replace or compensate for lost habitats;
  - (x) interesting and varied views are provided from the roads detailed in Table 1 of Schedule 19 of the Agreement which are not adversely affected by the avoidable positioning of any element of the New Works; and

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- (xi) account is taken of stopping and overtaking sightline distances, minimum clear distances for signs and the visibility of marker post reflective strips and numbers.
- 6.17.5 Subject to the other provisions of this Agreement drystone walls shall be retained wherever possible as landscape features and ecological habitat and to connect with the new drystone walls detailed in Appendix D and E.
- 6.17.6 All existing roads, tracks, hardstanding areas, kerbs, gullies, lamp posts, barriers, signage and otherwise, made redundant as a result of the New Works, shall be removed to their full depth of construction, graded to appropriate levels and reinstated with subsoil and topsoil where appropriate to allow their use for planting or seeding in accordance with the road and landscape Design.
- 6.17.7 The Design shall ensure that the method of treating phytotoxic elements, including, but not limited to tar, sulphurous compounds, petrochemicals and otherwise, shall not adversely effect the growth of plants and shall not contaminate topsoil or adjacent watercourses.
- 6.17.8 The Company shall exploit opportunities to re-use and recycle materials including soils, peat, vegetation, rock and otherwise within the New Works Site.
- 6.17.9 All excess material, excluding topsoil and surface peat, shall be disposed of in accordance with this Agreement and with due regard to minimising impact to the environment. The Company shall make timeous applications and be responsible for all waste management licenses required for the New Works.
- 6.17.10 The Company shall consult and comply with the requirements of SEPA regarding the disposal of waste.
- 6.17.11 The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.
- 6.17.12 Topsoil and topsoiling shall be in accordance with Earthworks Section 1.6
- 6.17.13 Prior to issue of the Final Completion Certificate the Company shall provide the Contracting Authority with a report describing the oppurtunities for future provision of public art at key locations, including:
- (i) Stonehaven Junction area;
  - (ii) Charleston Junction area;
  - (iii) Cleanhill Junction area;
  - (iv) River Dee crossing area;
  - (v) Milltimber Junction area;
  - (vi) South Kingswells Junction area;
  - (vii) Craibstone/A96 Junction area;
  - (viii) River Don crossing area;
  - (ix) Goval Junction / Formatine & Buchan Way area; and
  - (x) Blackdog Junction area.

## Part 2 Specific Requirements

**6.18 Protection of Existing Vegetation**

- 6.18.1 The Design shall incorporate the following general protection requirements with respect to existing vegetation:
- (i) to protect and retain the maximum possible amount of existing woodland, scrub, individual trees and shrubs and grassland vegetation as a potentially valuable landscape and ecological resource; and
  - (ii) to reuse/recycle existing cleared vegetation and soils and seed bank in the New Works;
- 6.18.2 Vegetation currently identified as that which shall be protected is shown on the Indicative Landscape Design drawings as listed in Appendix 0/4 to Part 4 of Schedule 2
- 6.18.3 The Company shall carry out a pre-construction survey to identify the vegetation as described and shall agree with Contracting Authority areas which shall be retained and protected. The extent and type of the vegetation agreed to be retained shall be recorded on drawings produced by the Company based on the format of the Indicative Landscape Design drawings.
- 6.18.4 The Company shall consult and comply with the requirements of the Specification and the Contracting Authority in connection with vegetation removal and general site clearance.
- 6.18.5 During the construction and completion of the New Works the Company shall erect a temporary fence around areas of existing vegetation within the New Works Site that require to be protected, in line with 'BS 5837: Trees in relation to design, demolition and construction' dated 30th April 2012.
- 6.18.6 The Company shall ensure that no personnel are permitted to enter the protected fenced areas during the course of the New Works other than to erect and remove the temporary fencing.
- 6.18.7 Subject to the other provisions of this Agreement, the Company shall ensure that no damage to existing vegetation or ground conditions occurs in such protected areas during the New Works.
- 6.18.8 Should damage occur, the Company shall undertake at it's own cost all necessary remedial works.
- 6.18.9 Such remedial works for trees, shrubs and other vegetation shall include but not be limited to replacement planting of the same size and form as the vegetation prior to the damage.
- 6.18.10 Such remedial works for damage to the ground conditions shall include removal and reinstatement of the ground plus the replacement, as above, of any vegetation that may be affected.
- 6.18.11 Temporary fencing may be removed on completion of engineering works in the vicinity of protected vegetation with the agreement of the Contracting Authority, and in any case shall be removed before Final Completion.

## 6.19 Protection from Wind and Windthrow

The Company shall assess the potential effect of windthrow on any existing planting and shall incorporate into the Design any appropriate mitigation measures. The Company shall consult with the Contracting Authority before carrying out any work on site which may have an impact on neighbouring landowners.

## 6.20 Planting Design

6.20.1 The planting Design shall be in accordance with the Indicative Landscape Design Drawings as listed in Appendix 0/4 to Part 4 of these New Works Requirements.

6.20.2 Changes to the planting Design may be permitted where appropriate only in locations where in the opinion of the Contracting Authority, the Design differs significantly from that indicated on the Indicative Landscape Design Drawings as listed in Appendix 0/4 to Part 4 of these New Works Requirements.

6.20.3 In considering any changes to the Design the Company shall:

- (i) retain existing trees and hedgerows wherever possible, and tie in with new planting proposals;
- (ii) avoid planting where the route crosses naturally open tracts of land, unless such planting is required for essential screening;
- (iii) minimise the risk of collision between vehicles and deer. The Company shall undertake an assessment of the potential risk of collisions between vehicles and deer and identify appropriate mitigation measures. Where compatible with other requirements, such measures shall include avoiding planting in locations which may obscure lines of sight between vehicles using the Project Roads and areas where deer may be present. Where necessary, such measures shall include erection of deer fencing to minimise the risk of collision between vehicles and deer;
- (iv) compensate for woodland lost in the New Works Site;
- (v) reinforce and link with existing hedgerows including those severed by the New Works and trees for visual and ecological continuity;
- (vi) make good use of redundant field corners and landlocked areas as appropriate;
- (vii) provide mass planting at junctions, interchanges and bridges to help assimilate the new arrangements into the surrounding landscape;
- (viii) provide visual interest throughout the route but particularly at junctions and interchanges;
- (ix) provide ecological diversity and interest wherever possible;
- (x) provide visual screening of the Project Roads and associated Structures from nearby receptors;
- (xi) ensure that the plants selected shall be generally native to the area and in keeping with the naturally occurring and existing vegetation. The planting species shall also be appropriate to the physical conditions of the locality;
- (xii) consolidate and reinforce field patterns; and
- (xiii) reduce adverse landscape and visual impacts whilst retaining beneficial views from all roads detailed in Table 1 of Schedule 19 of the Agreement.

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- 6.20.4 The various species and sizes of trees and shrubs incorporated in the Design shall be arranged in such a way that they create either natural woodland characteristics typical in the locality or a designed landscape feature.
- 6.20.5 Gorse or broom shall not be planted or seeded on the New Works Site.
- 6.20.6 Plant stock, provenance requirements, planting mixes and densities included in the Design shall be as shown on the Indicative Landscape Design and in the Specification. Other planting mixes may be permitted where appropriate, in locations where, in the opinion of the Contracting Authority, the Design differs significantly from that indicated on Indicative Landscape Design.
- 6.20.7 Specific requirements for planting mixes to be used in the landscape Design are listed below:
- (i) Areas of Semi Natural Woodland planting:
    - (a) Planted as a mix of predominantly native trees and shrubs, these areas are intended to mature as multi-layered woodland with a mix of native species including oak, birch, alder, elder, rowan, blackthorn, and rose.
    - (b) The Design shall resemble naturally occurring planting, featuring clumps and glades.
    - (c) Areas towards the edges of woodlands areas shall be planted with predominantly native trees and shrubs with a high percentage of small trees shrubs and climbers, and no large trees.
  - (ii) Areas of Screening Woodland planting:
    - (a) Planted as a mix of predominantly native trees and shrubs, these areas are intended to mature as multi-layered screening woodland with a mix of native species including evergreen species to assist with year round screening. Species include pine, yew, willow, rowan and holly.
    - (b) The Design shall resemble naturally occurring planting, featuring clumps and glades.
    - (c) Areas towards the edges of woodlands areas shall be planted with predominantly native trees and shrubs but with a high percentage of small trees shrubs and climbers but no large trees.
  - (iii) Wet Woodland / Scrub planting:
    - (a) These areas are intended to mature as a mix of native shrubs and small trees such as hawthorn, hazel, goat willow and birch. The Design shall resemble naturally occurring planting, featuring clumps and glades, with species mixes reflecting locally occurring native vegetation.
  - (iv) Shrub/Scrub planting:
    - (a) These areas are intended to mature as a mix of native shrubs such as hawthorn, blackthorn, elder and goat willow. The Design shall resemble naturally occurring planting, featuring clumps and glades, with species mixes reflecting locally occurring native vegetation.
  - (v) Hedge/Hedgerow Trees:



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- (a) Generally the hedge species shall reflect those of the existing hedgerows. Native species shall be utilised, including hawthorn, dog rose, blackthorn and honeysuckle.
- 6.20.8 Holly species grown to over 500 millimetres height shall be cut back to 200 millimetres immediately prior to delivery.
- 6.20.9 The Company shall ensure that all new planting is adequately protected against destruction or damage by animals including, but not limited to, livestock, deer, rabbits, hares and voles. Protection for holly and evergreen trees shall be in the form of shrub shelters. Rabbit repellent sprays shall not be acceptable.
- 6.20.10 No shrubs or hedges shall be planted within 3 metres of a carriageway and no trees, except those maintained as hedging, within 5 metres. With respect to pipelines, underground cables, overhead wires and other equipment, all statutory or advisory minimum planting distances and clearances shall be adhered to.
- 6.20.11 Ground preparation for woodland, including scrub woodland, planting in undisturbed ground shall be as follows:
- (i) On dry, free draining ground herbaceous and undesirable woody vegetation, including gorse and broom, shall be cleared from individual planting locations within a minimum of 500 mm radius of each plant in the autumn prior to planting and the plant locations treated with translocated herbicide. The planting method shall be notch or pit planting in accordance with the Specification.
  - (ii) On wet, poorly drained ground, planting shall be into inverted turves using the notch planting method in accordance with the Specification.
- 6.20.12 The Design shall ensure that areas disturbed during the construction of the New Works shall be reinstated with a vegetation cover similar to that in areas adjacent to the disturbed area except for areas of planting, land reinstated for arable agricultural purposes and areas of wildflower seeding.

## 6.21 Management of Existing Vegetation

- 6.21.1 The Company shall survey the condition of the existing vegetation to be retained and shall submit a written action report of proposed remedial management measures to the Contracting Authority prior to commencement of any such works. The Company shall undertake all the measures which have been agreed by the Contracting Authority, in accordance with Clauses 3006 and 3010 of the Specification. Specifically the report shall include proposals for:
- (i) felling or pruning of any dead, diseased or unsafe trees or plants blocking signs and lines of sight;
  - (ii) thinning of any overcrowded trees and shrubs to allow better specimens to grow, improve habitat value or reduce shading to adjacent houses and gardens;
  - (iii) coppicing of overgrown trees and shrubs to allow growth of new shoots;
  - (iv) under planting of new shrubs and trees in gapped areas to increase screening, enhance visual amenity or improve habitat value;

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**Part 2 Specific Requirements**

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- (v) wildlife habitat creation, for example through deposition of felled timber and brash within woodland areas in log piles and windrows where appropriate; and
- (vi) measures to mitigate the potential for wind throw in areas of trees affected by the New Works.

**6.22 Grass and Herbaceous Vegetation General Design Requirements****6.22.1 Marginal Aquatic Planting**

Ledges occupying the zone between 0 and 0.5 metres below average water level within storage, attenuation or settlement ponds at the locations identified on the Indicative Landscape Design Drawings as listed in Appendix 0/4 to Part 4 of these New Works Requirements shall be fully planted with locally occurring native emergent aquatic species to provide visual interest and wildlife habitat and discourage public access to the water.

**6.22.2 Riparian Corridor Planting**

The planting Design shall include herbaceous planting associated with riparian corridors comprising native species occurring adjacent to the proposed planting sites using material translocated from areas disturbed by construction, where possible. The locations for herbaceous planting shall include all diverted watercourses or stretches of watercourses where existing herbaceous vegetation has been removed during construction of the New Works.

**6.22.3 Grass and Wildflower Seeding**

- (i) The seed mix Design for areas of grass and wildflower seeding shall be in accordance with the Specification.
- (ii) Productive grassland shall be used where grassland is to be returned to agricultural use for pasture. The Company shall consult with the Contracting Authority with regard to species mixes and sowing density on land potentially to be returned to agriculture.
- (iii) Areas to be potentially returned to arable use shall be seeded with nitrogen fixing species and the plants grown from such seed shall be ploughed into the soil after one full growing season. The Company shall consult with the Contracting Authority with regard to species mixes and sowing density on land to be returned to arable use.
- (iv) All woodland, and scrub woodland planting areas shall be seeded with a low-maintenance grass mix capable of suppressing weed growth in planting areas until a full canopy of trees and shrubs has developed.

**6.23 Programme and Method Statements**

- 6.23.1 The Company shall submit a Landscape Maintenance Manual to the Contracting Authority for approval not less than 6 weeks prior to commencement of planting operations detailing the landscape maintenance and management operations that the Company propose to carry out during the Establishment Period.
- 6.23.2 All landscape preparation, planting and seeding in the New Works shall be completed at the earliest practical opportunity to ensure early establishment.

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**Part 2 Specific Requirements**

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6.23.3 The Company shall provide method statements which shall explicitly describe the role of the Company's specialist environmental staff for all stages of the New Works. The method statements shall include, but shall not be limited to, the following activities and are to be provided for the consent of the Contracting Authority prior to the commencement of the New Works.

- (i) clearance of vegetation and erection of protective fencing;
- (ii) management of existing vegetation;
- (iii) earthworks, ground preparation, soil stripping and soiling;
- (iv) construction of protective fencing, for vegetation and wildlife;
- (v) grass / wildflower seeding including natural regeneration;
- (vi) weed control and herbicide application;
- (vii) planting;
- (viii) direct tree and shrub seeding; and
- (ix) protection of species protected by statute.

**6.24 Site Attendance**

6.24.1 The Company shall note the site attendance requirements in respect of specialist environmental staff as detailed in Section 19 of Part 1 of Schedule 2 of the Agreement.

**6.25 Contamination and Mitigation**

6.25.1 The Company shall consult and comply with the requirements of SEPA, Aberdeen City Council and Aberdeenshire Council regarding treatment and disposal of all contaminated materials

Contacts:

SEPA  
Inverdee House,  
Baxter Street,  
Aberdeen AB11 9QA  
Tel: 01224 266600

Aberdeen City Council  
Environmental Protection Services  
Neighbourhood Services Central  
4th Floor St Nicholas House  
Broad Street  
Aberdeen  
AB10 1BX  
Tel: 01467 620 981

Aberdeenshire Council  
Planning and Environmental Services  
Gordon House  
Blackhall Road  
Inverurie  
AB15 3WA  
Tel: 01224 522 000

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- The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.
- 6.25.2 The Company shall be responsible for the implementation of any ground investigation it requires to provide information for the Design of the New Works and monitoring purposes to deal with known or suspected contamination and to support reuse and management of waste materials.
- 6.25.3 The Company shall select materials suitable for the environment in which they shall be placed taking into account the presence of known or suspected contaminants and shall refer to appropriate guidance in the selection of materials.
- 6.25.4 The Design, execution and completion of the New Works shall take into account the presence of known and potential land contamination. It shall achieve the objective of protection of all environmental receptors (including humans, water environment, ecology, and built structures from land contamination) through design and implementation of appropriate mitigation design and monitoring procedures.
- 6.25.5 The Company shall employ source – pathway – receptor assessments to assess the risks to human health and the environment for all phases and activities to be undertaken during the New Works, including, but not limited to ground improvement works, piling works, grouting works, service ducts, existing and new drainage, and use of SUDS. Such risk assessments shall be undertaken in accordance with published guidelines included in Appendix O.
- 6.25.6 The Company shall ensure that the New Works Site shall not be capable of being determined as Contaminated Land under and as defined by Part IIA of the Environmental Protection Act 1990 as a result of the Works. The Company shall ensure that existing linkages are minimised as far as reasonably practicable and new pollutant linkages are not created.
- 6.25.7 Mitigation works shall be designed and implemented for all areas of potential contamination identified as presenting a risk to an environmental receptor. These shall address the following:
- (i) removal of pathways to isolate contamination sources from receptors;
  - (ii) protection of receptors;
  - (iii) source removal; and
  - (iv) verification to demonstrate that the mitigation objectives have been addressed.
- 6.25.8 The Company shall undertake a watching brief for potential land contamination during the Works. In the event of suspected land contamination being discovered / encountered at any time during the Works, the Company shall notify the Contracting Authority immediately.
- 6.25.9 The Company shall submit to the Contracting Authority, for review and comment, the output of all risk assessments and mitigation Designs, and method statements detailing his proposed monitoring and on-site controls for mitigating the risks associated with contaminated soil, groundwater, dust and gases including reference to the safety and welfare of the general public, no later than 21 days prior to commencement of the New Works.

## 6.26 Materials Reuse and Waste Management

- 6.26.1 The Company shall prepare a Site Waste Management Plan ("SWMP") as part of the Environmental Management Plan as detailed in Appendix 1/24 (Quality Assurance) to the Specification. As part of the SWMP, the Company shall provide a system for tracking and recording the movement of all contaminated material and waste within the site. This shall include details of the locations from which material has been excavated and its final placement.
- 6.26.2 The Company shall have a specific documented approach to waste minimisation that shall feature in the SWMP to ensure that no unnecessary waste arisings go to landfill. This shall contain targets to reduce, re-use and / or recycle waste.
- 6.26.3 An assessment of soils and sub-soils to be reused shall be undertaken to identify any potential risks to human health or the water environment during and after construction.
- 6.26.4 The Company shall, as part of its Waste Management Plan, develop a soil and associated materials handling and management plan to minimise impacts of soil and materials storage and handling on the environment. This shall be based on the Code of Practice for the Sustainable Use of Soil published by DEFRA in 2009.
- 6.26.5 The Company shall:
- (i) clearly identify all soil resources, grades of earthworks, fill and aggregate materials;
  - (ii) design appropriate storage areas for each category of soil, fill and aggregate material;
  - (iii) plan the location of storage areas to minimise transportation movements on the Site;
  - (iv) screen designed storage areas for environmental risk;
  - (v) ensure all stockpiles have suitably designed protection (e.g. seeding to prevent erosion); and
  - (vi) find a sustainable use for any surplus soils on site (both topsoil and subsoil).
- 6.26.6 The Company shall use appropriate storage methods for any construction materials.
- 6.26.7 The Company shall, to the extent reasonable and practicable, select plant for use on Site and carry out the Works to minimise the impacts that the transfer of materials can have on the environment e.g. compaction and waterlogging.
- 6.26.8 The Company shall clearly explain and communicate the Code of Practice for the Sustainable Use of Soil and accompanying method statement to all relevant operatives and staff and compliance with the code shall be checked and verified by the Company.

**APPENDIX A - AMENDMENTS TO THE DMRB AND THE MCHW**

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## Part 2 Specific Requirements

**APPENDIX A**  
**AMENDMENTS TO THE DMRB AND THE MCHW**

**INTERIM AMENDMENTS**

| <b>Title</b>                 | <b>Description</b>                                                                                                                                                                                                                                                                            |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SEDD INTERIM AMENDMENT NO 11 | Volume 0: Section 1:<br>Model Contract Document For Highway Works<br>The Housing Grants, Construction and Regeneration Act 1996                                                                                                                                                               |
| SEDD INTERIM AMENDMENT NO 12 | Volume 1: Specification For Highway Works – March 1998<br>Sector Scheme 14 (for the Production of Asphalt Mixes)                                                                                                                                                                              |
| SEDD INTERIM AMENDMENT NO 13 | Volume 0: Section 1: Model Contract Document For Highway Works Part 3: Model Contract Document For Highway Works (For Use In Scotland) - August 1994<br>Supply of Goods and Services by Local Authorities                                                                                     |
| SEDD INTERIM AMENDMENT NO 14 | Volume 0: Section 1: Model Contract Document For Highway Works Part 3: Model Contract Document For Highway Works (For Use In Scotland) - August 1994<br>Aggregates Levy                                                                                                                       |
| SEETLLD INTERIM AMENDMENT 16 | Volume 0, Section 1: Model Contract Document For Highway Works Part 3: Model Contract Document For Highway Works (For Use In Scotland) – August 1994.<br>Volume 4: Section 1: Method Of Measurement For Highway Works<br>Sustainability in Construction – The Considerate Constructors Scheme |
| SE INTERIM AMENDMENT 18      | Manual Of Contract Documents For Highway Works (MCHW) Volume 1: Specification For Highway Works – May 2005.<br>Volume 2: Notes For Guidance On The Specification For Highway Works – May 2005<br>The Use of the Saturation Ageing Tensile Stiffness (SATS) Test                               |



## Part 2 Specific Requirements

| Title                          | Description                                                                                                                                                                             |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TS INTERIM AMENDMENT 20        | Design Manual For Road And Bridges Volume 3.<br>Interim Management Strategy For Concrete Half-Joint Deck Structures                                                                     |
| TS INTERIM AMENDMENT 21        | Design Manual For Road And Bridges Volume 3.<br>Principal and general inspection of sign/signal gantries, and gantries with low handrails or open mesh flooring (BD 63/94 and BA 63/94) |
| TS INTERIM AMENDMENT 22        | Implementation Of New Reinforcement Standards (BS 4449:2005, BS 4482:2005, BS 4483: 2005 And BS 8666:2005).                                                                             |
| TS INTERIM AMENDMENT 23 Rev 02 | Implementation Of BS8500-1:2006 Concrete – Complementary British Standard To BS EN 206-1                                                                                                |
| TS INTERIM AMENDMENT 24        | Guidance on Implementing Results of Research on Bridge Deck Waterproofing.                                                                                                              |
| TS INTERIM AMENDMENT 25        | Assessment and Upgrading of Existing Vehicle Parapets.                                                                                                                                  |
| TS INTERIM AMENDMENT 26        | The Anchorage of Reinforcement and Fixings in Hardened Concrete.                                                                                                                        |
| TS INTERIM AMENDMENT 27 Rev 01 | Implementation of Construction (Design and Management) 2007 and the withdrawal of SD 10/05 and SD 11/05                                                                                 |
| TS INTERIM AMENDMENT 28 Rev 02 | Certification of Combined Kerb and Drainage Products                                                                                                                                    |
| TS INTERIM AMENDMENT 29        | Identification of 'Particularly at Risk' Supports                                                                                                                                       |
| TS INTERIM AMENDMENT 30        | The Use of Foamed Concrete                                                                                                                                                              |
| TS INTERIM AMENDMENT 32        | Clarification on the deflection of permanent formwork during the construction of trunk road bridges                                                                                     |
| TS INTERIM AMENDMENT 33        | Guidance on the use of various documents relating to General & Principal Inspections for Trunk Road Road Structures                                                                     |
| TS INTERIM AMENDMENT 34        | Guidance on the use of High Friction Surfacing at Signalised Pedestrian Crossings                                                                                                       |

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| Title                   | Description                                                                             |
|-------------------------|-----------------------------------------------------------------------------------------|
|                         | on single carriageway Trunk Roads                                                       |
| TS INTERIM AMENDMENT 35 | Guidance on the Introduction of Transport Scotland TS 2010 surface course specification |
| TS INTERIM AMENDMENT 36 | Guidance on structural safety reporting relating to the Scottish Trunk Road Network     |
| TS INTERIM AMENDMENT 37 | Design of Single 2+1 single roads                                                       |
| TS INTERIM AMENDMENT 38 | Temporary Barrier Decision Tool (TBDT)                                                  |
| TS INTERIM AMENDMENT 39 | Use of Eurocodes for the Design of Bridges and Road Related Structures                  |
| TS INTERIM AMENDMENT 40 | Road Safety Auditor Certification – Compliance with EC Directive 2008/96/EC             |

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**APPENDIX B - CONSULTATION MATRIX**

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## Part 2 Specific Requirements

| Clause Number              | Subject                                                                                 | Contact                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SCHEDULE 2 – PART 1</b> |                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 6.1                        | Temporary Traffic Management Schemes                                                    | Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Transport Scotland Trunk Road and Bus Operations: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Police Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>The Scottish Ministers Trunk Road North East Management Unit: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED] |
| 6.2                        | Speed Restrictions                                                                      | Police Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                                                                                                                                                                                                                       |
| 8.3                        | Permanent fencing and Accommodation Works fencing                                       | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                                                                                                                                                                                                                    |
| 8.4                        | Working hours and the control of noise and vibration                                    | Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                                                                                                                                    |
| 9.2                        | Network Rail Licences and Approvals                                                     | Network Rail: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                                                                                                                                                                                                                          |
| 9.3                        | Requirements of the Water Environment (Controlled Activities) Regulations 2005 (“CAR”). | SEPA: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                                                                                                                                                                                                                                  |
| 12.1                       | Permissions which are required to enable the Accommodation Works                        | Relevant Landowners                                                                                                                                                                                                                                                                                                                                                                                                                                       |

## Part 2 Specific Requirements

| Clause Number       | Subject                                                                                | Contact                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13.1                | Alterations to public and private roads, accesses and public and private rights of way | Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]<br>Relevant Owners as appropriate.                                                                                                                                                                                                                                                                 |
| 14.4                | Security and protection                                                                | Police Scotland; [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                                                                                                                                                                                                                       |
| 17.9                | Road Safety Audits on Temporary Traffic Management Schemes                             | Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]<br>Transport Scotland Trunk Road and Bus Operations: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Police Scotland; [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>The Scottish Ministers Trunk Road North East Management Unit: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED] |
| SCHEDULE 2 - PART 2 |                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1.1.2 (iv)          | Design standards for side roads                                                        | Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                                                                                                                                    |
| 1.1.10 (iv)         | Police observation platforms                                                           | Police Scotland; [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                                                                                                                                                                                                                       |

## Part 2 Specific Requirements

| Clause Number | Subject                                                                                                                                    | Contact                                                                                                                                                                                                                                                        |
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| 1.1.11 (ii)   | Location of maintenance crossover points                                                                                                   | Transport Scotland Trunk Road and Bus Operations: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                           |
| 1.1.17 (iii)  | Application of the principles of Secured by Design (ACPO) to the design of temporary and permanent footpaths, cycle paths and underpasses. | Police Scotland Crime Prevention Design Advisor: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]  |
| 1.2.1 (i)     | Site Clearance                                                                                                                             | Transport Scotland Trunk Road and Bus Operations: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED] |
| 1.3.1 (vi)    | Anti-Glare screens                                                                                                                         | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                         |
| 1.3.2 (i)     | Temporary Fencing, Gates and otherwise                                                                                                     | Relevant Landowners                                                                                                                                                                                                                                            |
| 1.3.3 ((iv)   | Permanent Boundary Fencing, Walling, Gates and otherwise.                                                                                  | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                         |
| 1.3.4 (iii)   | Design, location and extent of fencing for protected species.                                                                              | Scottish Natural Heritage: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                  |
| 1.3.5 (ii)    | Location of Noise Fences and Barriers                                                                                                      | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                         |



## Part 2 Specific Requirements

| Clause Number | Subject                                                                                                             | Contact                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| 1.4.1         | Road Restraint Systems                                                                                              | <p>Aberdeen City Council: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]<br/>           Aberdeenshire Council: [REDACTED]<br/>           Tel; [REDACTED]<br/>           Email: [REDACTED]<br/>           The Scottish Ministers Trunk Road North<br/>           East Management Unit: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]</p>                                                                                                                                                         |
| 1.5.1         | Water Environment (Controlled Activities) Regulations 2005 ("CAR").                                                 | <p>SEPA: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1.5.2 (iii)   | Design including, but not limited to, drainage outfalls, culverts, all works on inland waters and pollution control | <p>SEPA: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1.5.2 (iv)    | Discharging water from the New Works Site on either a temporary or permanent basis                                  | <p>SEPA: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]<br/>           Scottish Natural Heritage: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]<br/>           Scottish Water: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]<br/>           Aberdeen City Council: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]<br/>           Aberdeenshire Council: [REDACTED]<br/>           Tel; [REDACTED]<br/>           Email: [REDACTED]</p> |

## Part 2 Specific Requirements

| Clause Number | Subject                                               | Contact                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.5.2 (v)     | Drainage connections to the existing drainage network | <p>Aberdeen City Council: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]<br/>           Aberdeenshire Council: [REDACTED]<br/>           Tel; [REDACTED]<br/>           Email: [REDACTED]<br/>           Transport Scotland Trunk Road and Bus Operations: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]<br/>           The Scottish Ministers Trunk Road North East Management Unit: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]<br/>           Scottish Water; [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]</p> |
| 1.5.3 (ix)    | Land drain connections                                | Relevant Landowners                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1.5.4 (v)     | Incorporation of existing drainage into the New Works | <p>SEPA: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]<br/>           Aberdeen City Council: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]<br/>           Aberdeenshire Council: [REDACTED]<br/>           Tel; [REDACTED]<br/>           Email: [REDACTED]<br/>           Transport Scotland Trunk Road and Bus Operations: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]</p>                                                                                                                                                                   |

## Part 2 Specific Requirements

| Clause Number | Subject                                                                                                                                 | Contact                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| 1.5.6 (viii)  | Provision of trash screens and security screens at culverts                                                                             | <p>Aberdeen City Council: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]<br/>           Aberdeenshire Council: [REDACTED]<br/>           Tel; [REDACTED]<br/>           Email: [REDACTED]<br/>           SEPA: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]<br/>           Transport Scotland Trunk Road and Bus Operations: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]</p> |
| 1.5.7 (ii)    | Flood prevention and flood control                                                                                                      | <p>SEPA: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]<br/>           Aberdeen City Council: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]<br/>           Aberdeenshire Council: [REDACTED]<br/>           Tel; [REDACTED]<br/>           Email: [REDACTED]<br/>           Transport Scotland Trunk Road and Bus Operations: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]</p> |
| 1.5.7 (xiii)  | Measures to prevent unauthorised use of maintenance access routes and safety at settlement, attenuation or storage ponds and otherwise. | <p>Transport Scotland Trunk Road and Bus Operations: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]</p>                                                                                                                                                                                                                                                                                                                                   |
| 1.5.8 (i)     | Watercourse Diversion Design                                                                                                            | <p>Scottish Natural Heritage: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]<br/>           SEPA: [REDACTED]<br/>           Tel: [REDACTED]<br/>           Email: [REDACTED]</p>                                                                                                                                                                                                                                                          |
| 1.5.9 (i)     | Provision of Service Ducts                                                                                                              | <p>Undertakers and other Relevant Parties<br/>           Who's details are listed in Specification Appendix 1/16.</p>                                                                                                                                                                                                                                                                                                                                                 |

## Part 2 Specific Requirements

| Clause Number | Subject                                                                                                                          | Contact                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.6.1 (xi)    | Proposals for necessary works to existing gabions or crib walling.                                                               | Transport Scotland Trunk Road and Bus Operations: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                                                                                                                                                            |
| 1.6.1 (xvi)   | Earthworks in the vicinity of railway                                                                                            | Network Rail: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                                                                                                                                                                                                |
| 1.6.8 (iii)   | Blasting                                                                                                                         | Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]<br>Scottish Natural Heritage: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>The Scottish Ministers Trunk Road North East Management Unit: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Network Rail: [REDACTED]<br>Tel: [REDACTED]<br>Email; [REDACTED] |
| 1.7.1 (iv)    | Carriageway tie-ins that extend outwith the Reference Points described in Table 1 of Schedule 19 of the Agreement for Side Roads | Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                                                                                                          |
| 1.7.4 (vi)    | Pavement Design for any Side Road pavement.                                                                                      | Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                                                                                                          |

## Part 2 Specific Requirements

| Clause Number | Subject                                                                                                                                                                                                      | Contact                                                                                                                                                                                                                                                        |
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| 1.8.1 (iii)   | Details of dropped kerb arrangements                                                                                                                                                                         | Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]                                                                                                         |
| 1.8.2 (xi)    | Design for kerbing, crossing points and access points from adjacent roads on combined footway/cycletracks and otherwise.                                                                                     | SUSTRANS<br>Tel:<br>Email:                                                                                                                                                                                                                                     |
| 1.9.1 (iii)   | All detail for the provision of traffic signs, road markings and studs for Trunk Roads, including junction numbering.<br><br>All detail for the provision of traffic signs and road markings for Side Roads. | Transport Scotland Trunk Road and Bus Operations: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED]<br>Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]  |
| 1.9.1 (iv)    | Maintaining existing sign information during construction of the New Works                                                                                                                                   | Transport Scotland Trunk Road and Bus Operations: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED] |
| 1.9.1 (xiv)   | Signing and marking of cycle facilities                                                                                                                                                                      | Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]                                                                                                         |

## Part 2 Specific Requirements

| Clause Number | Subject                                                                                                 | Contact                                                                                                                                                                                                                                                                                                                                                                           |
|---------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.9.1 (xxi)   | Provision, location and lighting of traffic signs on Side Roads.                                        | Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                                                            |
| 1.9.4 (ii)    | Location of the new distance marker posts.                                                              | Transport Scotland Trunk Road and Bus Operations: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                                                                                                              |
| 1.9.6 (i)     | Provision of road studs on Side Roads                                                                   | Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                                                            |
| 1.9.6 (ii)    | Locations for CHART node and section markers.                                                           | Transport Scotland Trunk Road and Bus Operations: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                                                                                                                              |
| 1.9.7.1 (i)   | Layout of traffic signals, pedestrian crossings and combined pedestrian / cycle crossing installations. | Transport Scotland Trunk Road and Bus Operations: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED]<br>Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]<br>The Scottish Ministers Trunk Road North East Management Unit: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED] |

## Part 2 Specific Requirements

| Clause Number | Subject                                                                                               | Contact                                                                                                                                                                                                                                                                                                                                                                            |
|---------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.9.7.1 (vii) | Optimum traffic signal operation.                                                                     | Transport Scotland Trunk Road and Bus Operations: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]<br>The Scottish Ministers Trunk Road North East Management Unit: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED] |
| 1.9.7.4 (i)   | the proposed communications solution and compatibility with the existing systems' telecommunications. | Transport Scotland Trunk Road and Bus Operations: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]<br>The Scottish Ministers Trunk Road North East Management Unit: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED] |
| 1.9.7.6 (i)   | Supply and install duct access chambers                                                               | Transport Scotland Trunk Road and Bus Operations: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]                                                                                                                     |

## Part 2 Specific Requirements

| Clause Number  | Subject                                                             | Contact                                                                                                                                                                                                                             |
|----------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.9.7.8 (v)    | Specification and type of Traffic Signal Controller to be procured. | Transport Scotland Trunk Road and Bus Operations: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                |
| 1.9.7.9 (ii)   | Passively safe traffic signal posts on side roads.                  | Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]                                                                              |
| 1.10.1 (ii)    | Proposals for Road Lighting                                         | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:<br>[REDACTED]<br>Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED] |
| 1.10.1 (lviii) | Format of the Overseeing Organisation table of attributes.          | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                              |
| 1.10.1 (lxv)   | Temporary lighting arrangements                                     | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                              |
| 1.10.3 (ii)    | New Road Lighting                                                   | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]    |



## Part 2 Specific Requirements

| Clause Number | Subject                                                                         | Contact                                                                                                                                                                                                                          |
|---------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.10.3 (xi)   | Primary and Redundancy Servers                                                  | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                           |
| 1.10.3 (xxi)  | Provision of new lighting columns at and around the interface Reference Points. | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED] |
| 1.10.3 (xxii) | Lighting Design and Approvals                                                   | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED] |
| 1.10.3 (xxv)  | Locations of permanent power supplies for road lighting and electrical works.   | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED] |
| 2.1.4         | Structures over or adjacent to railway lines                                    | Network Rail: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                 |
| 2.1.6         | Structures adjacent to watercourses                                             | SEPA: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                                         |

## Part 2 Specific Requirements

| Clause Number                                    | Subject                                                                                                                                      | Contact                                                                                                                                                |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.1.7                                            | Apparatus and structures                                                                                                                     | Refer to the contact details for Undertakers given in Specification Appendix 1/16.                                                                     |
| 2.12.3.2                                         | Paint protection system including colour                                                                                                     | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED]                                                                                  |
| 2.13.7 (o)                                       | Inspection platforms in front of abutments                                                                                                   | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED]                                                                                  |
| 2.14.1                                           | Reinforced soil structures                                                                                                                   | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED]                                                                                  |
| 2.14.2                                           | Precast Concrete Facing Panel                                                                                                                | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED]                                                                                  |
| 2.16.16                                          | Proposed paint systems for maintenance works                                                                                                 | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED]                                                                                  |
| 2.16.19                                          | Live load regime during the replacement of bearings                                                                                          | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED]                                                                                  |
| 2.19.5                                           | Road lighting on Side Road Structures                                                                                                        | Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED] |
| 3.1.1,3.4.1,<br>3.18.1,3.32.1,<br>3.36.1, 3.42.1 | Particular Requirements for Structures                                                                                                       | Network Rail: [REDACTED]<br>Tel: [REDACTED]<br>Email; [REDACTED]                                                                                       |
| 3.5.1(i)                                         | Protection to Sewers                                                                                                                         | Refer to the contact details for Undertakers given in Specification Appendix 1/16.                                                                     |
| 4.1.4                                            | Size and weight of Traffic Scotland Issued Equipment                                                                                         | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                 |
| 6.3.1                                            | Sites of archaeological interest or archaeological remains which are likely to be affected by the New Works, including the landscape Design. | Historic Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                  |

## Part 2 Specific Requirements

| Clause Number | Subject                                                                                                                                                                            | Contact                                                                                                                                                |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6.4.1         | Species or sites protected by legislation or scheduled for protection which are likely to be affected by the New Works, including any hard and soft landscaping                    | Scottish Natural Heritage: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                          |
| 6.4.5         | Carry out surveys of plants and animals protected by legislation, which may be directly or indirectly affected by the New Works.                                                   | Scottish Natural Heritage: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                          |
| 6.4.9         | Details of their proposals for mitigation measures following surveys of plants and animals protected by legislation, which may be directly or indirectly affected by the New Works | Scottish Natural Heritage: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                          |
| 6.5.1         | Air quality and dust emissions                                                                                                                                                     | Aberdeen City Council; [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED] |
| 6.6.2         | Water quality and drainage and the use of herbicides and other potentially polluting chemicals in proximity to watercourses.                                                       | SEPA: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                               |
| 6.7.1         | Planning policies and any statutory planning consents required in respect of the Design and the New Works                                                                          | Aberdeen City Council; [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council; [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED] |
| 6.8.1         | Construction Noise Levels                                                                                                                                                          | Aberdeen City Council; [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED] |
| 6.10.11       | Disposal of Waste                                                                                                                                                                  | SEPA: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                               |
| 6.11.1        | Protection of existing vegetation                                                                                                                                                  | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                 |
| 6.16.1 (ii)   | Species mixes and sowing density on land to be returned to pasture.                                                                                                                | Relevant Landowners                                                                                                                                    |

## Part 2 Specific Requirements

| Clause Number              | Subject                                                                                                                                                 | Contact                                                                                                                                                                                                                       |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6.19.1                     | Treatment and disposal of all contaminated materials.                                                                                                   | SEPA: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeen City Council; [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council; [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]            |
| <b>SCHEDULE 2 – PART 3</b> |                                                                                                                                                         |                                                                                                                                                                                                                               |
| 1.1.11                     | Provision of local VMS and associated infrastructure                                                                                                    | Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED]                                                                        |
| 1.4.1                      | “Strategy of ITS New Works for Traffic Scotland Equipment Document”                                                                                     | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED]                                                                                                                                                         |
| 1.4.2                      | Provide a communication network that is fully compatible with the Scottish Ministers existing communication network                                     | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                        |
| 1.4.3                      | Adoption of non-standard details                                                                                                                        | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                        |
| 2.1.1                      | Liaison with TSS equipment and service providers.<br><br>Interface between the TSS equipment provided by the Scottish Ministers and the Passive Network | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email: [REDACTED]                                                                                                                                                        |
| 2.1.3                      | Ownership of ITS equipment                                                                                                                              | Transport Scotland: [REDACTED]<br>Tel:[REDACTED]<br>Email:[REDACTED]<br>Aberdeen City Council: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED]<br>Aberdeenshire Council: [REDACTED]<br>Tel; [REDACTED]<br>Email: [REDACTED] |

## Part 2 Specific Requirements

| Clause Number | Subject                                                                                                                     | Contact                                                               |
|---------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| 3.3.5         | The time period before a temporary repair to Traffic Scotland Equipment must become permanent                               | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED] |
| 3.3.11        | Items of TSE to be removed from Site and taken to the EIE nominated store                                                   | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED] |
| 4.1.6         | IP communications infrastructure design                                                                                     | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED] |
| 5.2.1.6       | TSE site layouts not conforming to standard details                                                                         | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED] |
| 5.2.3.8       | Ascertain suitable interface locations for the ducting and chambers with the existing network at the extents of the scheme. | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED] |
| 5.2.5.8       | Connect / disconnect cables, transmission paths or lasers at or across the extents of the Site.                             | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED] |
| 5.5.4.11      | New WIM installations                                                                                                       | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED] |
| 5.5.5.9       | Testing, integration and performance requirements                                                                           | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED] |
| 5.5.11.3      | Marker post numbering System                                                                                                | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED] |
| 7.1.10        | Assembling Gantry mounted EIE and proving maintenance access requirements                                                   | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED] |
| 10.1.10       | Creation of the CTIP                                                                                                        | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED] |
| Appendix E    | Prepare a "Strategy for Delivery of the ITS works for Traffic Scotland Equipment                                            | Transport Scotland: [REDACTED]<br>Tel: [REDACTED]<br>Email:[REDACTED] |

**APPENDIX C - DEPARTURES FROM STANDARDS PROFORMAS**

**THIS IS APPENDIX C TO PART 2 OF THE NEW WORKS REQUIREMENTS**

**APPENDIX C**  
**Application for Departure from Standards**  
**DMRB Volumes 1, 2 and 3 (Structures) Proforma**

## Part 2 Specific Requirements

**DEPARTURE FROM STANDARDS**

(Bridges and other Highway Structures)

Name of Works .....

Name of Bridge or Structure .....

Structure Reference Number .....

**OVERSEEING ORGANISATION NAME:****APPLICATION FOR DEPARTURE FROM STANDARDS - (Departure Title)****APPLICANT:****PROJECT TITLE:****DEPARTURE No:****STRUCTURE REF:****SUBMISSION DATE:****1. List of supporting documentation**

Standards:

Drawings:

Other:

**2. Description of proposed departure**

(Include details of DMRB / Eurocode Standards and Clause numbers which are being departed from)

**3. Designer / Assessor justification**

(Include reasons why existing DMRB / Eurocode Standards are inappropriate)

**4. Cost implications**

(Include an estimate of cost savings to Transport Scotland as well as the effect on future maintenance costs)

**4.1. Construction costs****4.2. Maintenance costs****5. Applicant design of the Works Team Leader Declaration:**

I declare that reasonable professional skill and care have been exercised in the preparation of this Departure submission.

Signed:

Name:

Date:

**6. AWPR Contracting Authority Comments and Recommendation:**

I recommend that the above departure should be accepted / rejected

Signed:

Name:

Date:

**7. Overseeing Organisation Bridges Branch Comments and Recommendation:**

I recommend that the above departure should be accepted / rejected

Signed:



**Name:**

**Date:**

**8. Overseeingm Organisation Recommendation**

The above Departure is approved / rejected.

Signed:

Name:

Date:

**Application for Departure from Standards  
DMRB Volume 6 (Road Geometry) Proforma**

Part 2 Specific Requirements

**APPLICANT** : .....

**PROJECT TITLE** : .....

**DEPARTURE No.** : .....

**OVERSEEING ORGANISATION:**.....

| <b>PROJECT DETAILS</b>             |  |
|------------------------------------|--|
| General description of project     |  |
| Route strategy                     |  |
| Road category & type               |  |
| Proposed carriageway cross-section |  |
| Design Speed of the Works proposed |  |
| Future traffic flows & composition |  |

| <b>DESCRIPTION OF DEPARTURE</b>      |  |
|--------------------------------------|--|
| Location and chainage                |  |
| Departure type                       |  |
| DMRB reference                       |  |
| Required standard                    |  |
| Standard provided                    |  |
| Associated Departures or relaxations |  |
| Drawing Nos.                         |  |

**APPLICANT** : .....

**PROJECT TITLE** : .....

**DEPARTURE No.** : .....

**OVERSEEING ORGANISATION:**.....

| <b>JUSTIFICATION</b>   |  |
|------------------------|--|
| Detailed justification |  |
| Safety implications    |  |
| Structural integrity   |  |

| <b>ESSENTIAL COMPENSATORY MEASURES</b> |  |
|----------------------------------------|--|
| Compensatory measures                  |  |

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**APPENDIX D - DRYSTONE WALLS REQUIRED FOR LANDSCAPE AND VISUAL  
MITIGATION**

**THIS IS APPENDIX D TO PART 2 OF THE NEW WORKS REQUIREMENTS**

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## Part 2 Specific Requirements

| <b>Drystone walls approximate extents<br/>(Chainages)</b> |                                                          |                                                                                                    |
|-----------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <b>N, S, E and Westbound</b>                              |                                                          |                                                                                                    |
| <b>FAST LINK</b>                                          | <b>SOUTHERN LEG</b>                                      | <b>NORTHERN LEG</b>                                                                                |
| B979/A90 junction all four sides                          | 104540-104700 S                                          | 315120-315600 N                                                                                    |
| Stonehaven junction B979 N at SUDS.                       | Contlaw Road 170-230 N&S                                 | 315260-315630 S                                                                                    |
| 1570-1800 N                                               | Hill of Milltimber Access Road S                         | 317810-318900 S                                                                                    |
| 3500-3690 S                                               | 105350-105625 S                                          | 318100-318900 N                                                                                    |
| 4150-4300 N                                               | 106850-107320 S                                          | 319250-319450 S                                                                                    |
| 4780-6320 N                                               | 107100-107320 N                                          | 319580-319700 S                                                                                    |
| Skateraw to Cookney Access Road<br>50-170 W               | 107700-108500 N                                          | Pitmedden Farm Access Track (North) at 321470 N                                                    |
| 4880-6250 S                                               | A944 N from South Kingswells Junction to Kingslea access | 322150-322200 S                                                                                    |
| 6940-7000 S                                               | Kingsford to Gairnlea Road S and A944 N 700m             | LMA boundary at 322200-322240 N                                                                    |
| West Stoneyhill Access Rd. 640-900 NE.                    | 10890-109250 S                                           | 322500-322700 N                                                                                    |
| 7990-8200 NW                                              | 110820-11200 S                                           | 323600-324250 S                                                                                    |
| 7990-8200 SE                                              | 201300-201550 E                                          | 323600-324100 N including Goval (West) roundabout and field boundary at 323860 N323600-324250 S    |
| 10610-10920 NW                                            | 201750-202000 E                                          | B977 300-420 W<br>323600-324100 N including Goval (West) roundabout and field boundary at 323860 N |
| 10610-10920 SE                                            | Hillside to Batchart Road 100-250 S                      | B977 100-650 E B977 300-420 W                                                                      |
|                                                           | 202200-202300 E                                          | Goval (East) Junction Southbound off slip 0-300 near side B977 100-650 E                           |
|                                                           | 202300-202560 E                                          | 326800-327500 N<br>Goval (East) Junction Southbound off slip 0-300 near side                       |
|                                                           | 202560-202900 W                                          | 326920-327770 S 326800-327500 N                                                                    |
|                                                           | 202900-203150 E                                          | 328170-328900 S326920-327770 S                                                                     |
|                                                           | 203300-203500 E                                          | S328290-328900 S328170-328900 S                                                                    |
|                                                           | 203300-203650 W                                          | 330430-330600 NS328290-328900 S                                                                    |
|                                                           | 204200-204620 W                                          | Middleton Steadings Access Road whole length nearside (check)330430-330600 N                       |



## Part 2 Specific Requirements

| <b>Drystone walls approximate extents<br/>(Chainages)</b> |                                                                  |                                                                                                                                                               |
|-----------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>N, S, E and Westbound</b>                              |                                                                  |                                                                                                                                                               |
| <b>FAST LINK</b>                                          | <b>SOUTHERN LEG</b>                                              | <b>NORTHERN LEG</b>                                                                                                                                           |
|                                                           | 204850-205200 W                                                  | New Belhalvie to Wateridgemuir Road from Blackdog Junction to Middleton Steadings Access Road N Middleton Steadings Access Road whole length nearside (check) |
|                                                           | 205070-205200 E                                                  | New Belhalvie to Wateridgemuir Road from Blackdog Junction to Middleton Steadings Access Road N                                                               |
|                                                           | A956 Northbound off slip at Charleston Junction.nearside 400-900 |                                                                                                                                                               |
|                                                           | A956 Southbound on slip at Charleston Junction.nearside 600-930  |                                                                                                                                                               |
|                                                           | A956 Southbound off slip at Charleston Junction.nearside 0-300   |                                                                                                                                                               |
|                                                           | 206820-206970 E and Old Stonehaven Road junction                 |                                                                                                                                                               |
|                                                           | 206820-206970 W                                                  |                                                                                                                                                               |

**APPENDIX E - AESTHETIC REQUIREMENTS FOR NOISE BARRIERS**

**THIS IS APPENDIX E TO PART 2 OF THE NEW WORKS INFORMATION**

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## Part 2 Specific Requirements

The following Specific Requirements apply to any noise mitigation barriers which may be required at specific locations.

**Fastlink**

| Approximate Location | Approximate chainages<br>N, S, E or W/bound | Aesthetic Requirements                         |
|----------------------|---------------------------------------------|------------------------------------------------|
| Kempstone Hill       | 2280-2520 S                                 | Combination of false cutting and drystone wall |
| Strathgyle Cottage   | 4065-4270 S                                 | Drystone wall                                  |
| North Cookney Farm   | 6200-6275 S                                 | Drystone wall                                  |
| Meadowbank           | 7000-7065 S                                 | Drystone wall                                  |

**Southern Leg**

| Approximate Location                 | Approximate chainages<br>N, S, E or W/bound | Aesthetic Requirements                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eastlands                            | 101015-101225 N                             | Maximise use of planting to visually soften barrier. Ensure rounding of top of embankment slope. Avoid steps in barrier height/ undulating top profile.                                                                                                                                                                                                                                                      |
| Corbie Lodge and Corbie Linn         | 101550-101750 N                             | Drystone wall                                                                                                                                                                                                                                                                                                                                                                                                |
| Dee Crossing                         | 101870-102175 N&S                           | Transparent noise barrier fence                                                                                                                                                                                                                                                                                                                                                                              |
| Camphill and The Gables (Dee Valley) | 102165-102865 N                             | Combination of stone faced retaining wall, false cutting and noise barrier fence. The top of the false cutting shall be set back from the AWPR carriageway to allow planting both sides of the barrier fence to soften visual impact. Provide for a smooth transition between the transparent barrier fence over the Dee and other barrier fences and avoid steps in barrier height /undulating top profile. |

## Part 2 Specific Requirements

| Approximate Location                            | Approximate chainages<br>N, S, E or W/bound | Aesthetic Requirements                                                                                                                                               |
|-------------------------------------------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A93 westbound verge, west of B979 junction      | A93 0-100 W                                 | Mortared stone wall to match appearance of wall on opposite side of A93 to be in keeping with local character and help to offset loss of existing walls in the area. |
| Milltimber Brae Overbridge                      | Extent of overbridge both sides             | Transparent noise barrier fence.                                                                                                                                     |
| Milltimber junction link road                   | 0-915 S                                     | Drystone wall along the whole length of southbound verge.                                                                                                            |
| Milltimber including Old Deeside line Walk      | 102870-103950 S                             | High quality timber barrier fence with appearance of both sides in character with suburban garden boundaries. Avoid steps in barrier height /undulating top profile. |
| Westholme                                       | 108800-108855 N                             | High quality timber barrier fence with appearance of both sides in character with suburban garden boundaries. Avoid steps in barrier height /undulating top profile. |
| West Hatton and Highfield                       | 108910-109260 N                             | Avoid steps in barrier height/ undulating top profile on significant slope.                                                                                          |
| Fairley Home Farm, The Coach House and Bonvista | 109825-110395 S                             | Combination of false cutting (between ch109840 and 110395) and barrier fence (between ch109825 and 109970).                                                          |
| Blair-Crynoch                                   | 200120-200420 E                             | Drystone wall                                                                                                                                                        |
| Kemehede and Whitestones                        | 200750-201200 E                             | Combination of false cutting (between ch200750 and 201000) and barrier fence (between ch200865 and 201200).                                                          |
| Midfield Cottage                                | 203650-203820 W                             | Drystone wall                                                                                                                                                        |
| Rylands                                         | 204760-205050 E                             | Drystone wall                                                                                                                                                        |
| Newtonsyde and Novara                           | A90 1795-1945 S                             | Drystone wall and barrier fence                                                                                                                                      |

## Part 2 Specific Requirements

## Northern Leg

| Approximate Location                                                            | Approximate chainages<br>N, S, E or W/bound                                                                                   | Aesthetic Requirements                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Craibstone                                                                      | 316215-317035 S and A96 Craibstone Link Road<br>Including AWPR side of Southbound merge slip from A96<br>Craibstone Link Road | False cutting (between ch316215 and 316380) and barrier fence<br>(between ch316370 and 317035)                                                                                                                                                                                |
| Millview, Chapel of<br>Stoneywood                                               | On eastern side of New Craibstone roundabout A96<br>Junction                                                                  | Drystone wall                                                                                                                                                                                                                                                                 |
| Greenacres, Chapel of<br>Stoneywood 1-4 Walton<br>View, Chapel of<br>Stoneywood | 317665-318115 N                                                                                                               | False cutting, supplemented as necessary with noise barrier fence.                                                                                                                                                                                                            |
| Bogenjoss (ch 320430 –<br>320545 Nbd)                                           | 320390–320545 N                                                                                                               | False cutting where possible, supplemented as necessary with<br>noise barrier fence.                                                                                                                                                                                          |
| Lyndmoor and Tillybrig,<br>Pitmedden Road, Dyce                                 | 322200–322685 N                                                                                                               | False cutting where possible, supplemented as necessary with<br>drystone wall and noise barrier fence.<br>Rationalise safety barriers, noise barriers and bridge parapets to<br>ensure smooth transitions between barrier types and provide for<br>open views where possible. |
| Upper Kirkton, Dyce                                                             | 322200–322475 S                                                                                                               | False cutting with noise barrier fence. Rationalise safety barriers,<br>noise barriers and bridge parapets to ensure smooth transitions<br>between barrier types.                                                                                                             |
| Nether Kirkton, Dyce                                                            | 322710–322855 S                                                                                                               | Noise barrier fence. Rationalise safety barriers, noise barriers and<br>bridge parapets to ensure smooth transitions between barrier<br>types...                                                                                                                              |
| Parkhill Cottage and<br>Parkhill Pumping Station                                | 323955-324050 S                                                                                                               | Drystone wall                                                                                                                                                                                                                                                                 |
| The Bungalow, Parkhill                                                          | A947 1235-1425 N                                                                                                              | Noise barrier fence                                                                                                                                                                                                                                                           |
| Kinnaird, Parkhill, Dyce                                                        | A947 885-1000 S                                                                                                               | Drystone wall                                                                                                                                                                                                                                                                 |
| Corsehill Cottage, Goval                                                        | 325090-325380 S                                                                                                               | Drystone wall                                                                                                                                                                                                                                                                 |

## Part 2 Specific Requirements

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| Approximate Location                        | Approximate chainages<br>N, S, E or W/bound               | Aesthetic Requirements                                                     |
|---------------------------------------------|-----------------------------------------------------------|----------------------------------------------------------------------------|
| Lochgreens Cottage                          | 326750-326985 S                                           | False cutting where possible, supplemented as necessary with noise barrier |
| Middleton Farm and Steadings, Bridge of Don | 330425-330600 N                                           | Drystone wall                                                              |
| Wester Hatton Cottages, Balmedie            | A90 Southbound and along A90 Southbound diverge slip road | False cutting and drystone wall                                            |

## Part 2 Specific Requirements

**Balmedie - Tippetty**

| Approximate Location           | Approximate chainages<br>N, S, E or W/bound | Aesthetic Requirements                                                                                                                                                                                                                                                                                  |
|--------------------------------|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The Holdings, Balmedie         | 1080 – 1170 N                               | A 1.2m high stone wall, timber barrier or earth bund                                                                                                                                                                                                                                                    |
| Drumhead Lodge,<br>Balmedie    | 320 – 550 N                                 | Either a 0.8m high earth bund with a 1.6m high drystone wall or timber barrier, or 2.4m high earth bund                                                                                                                                                                                                 |
| Orrock                         | 1300 - 1900 N and<br>1930 – 2270 N          | A 1.5m high road side drystone wall                                                                                                                                                                                                                                                                     |
| Hill of Menie to<br>Stoneyards | 2200 – 2700 N and<br>2720 – 3300 N          | A 1.8m high timber noise barrier on top of a 2m high road side earth bund (or an equivalent earth bund 3.8m high if room within LMA to create this with a back-slope gradient meeting New Works Requirements). The top level of the barrier/bund must not block sea views from properties at Stoneyards |
| Dambræ                         | 2700 – 2720 N & S                           | A 2m high noise barrier to be integrated with bridge parapet for Dambræ Underpass, of a transparent material                                                                                                                                                                                            |
| Dambræ                         | 2670 – 2700 S and<br>2720 – 2750 S          | A 2m high noise barrier to integrate with false cuttings north and south of Dambræ underpass and with the noise barrier to be integrated with the underpass parapet structure                                                                                                                           |
| Aikenshill                     | 3400 – 4000 S                               | A road side earth bund varying in height between 2m and 4m                                                                                                                                                                                                                                              |
| Kirkhill                       | 4100 – 4450 N                               | A 1.8m high timber noise barrier on top of a 2m high road side earth bund                                                                                                                                                                                                                               |
| Kirkhill                       | 4450 – 4500 N                               | A roadside earth bund/timber noise barrier varying in height between 1.8m and 0m.                                                                                                                                                                                                                       |
| Kirkhill                       | 4550 – 4600 N                               | A 1.8m high timber noise barrier.                                                                                                                                                                                                                                                                       |
| Fornety, Tippetty              | 8050 – 8680 S                               | A 1.2m high timber roadside noise barrier, drystone wall or earth bund                                                                                                                                                                                                                                  |



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**APPENDIX F - PROCEDURE FOR DEMONSTRATING COMPLIANCE WITH THE  
JUNCTION REQUIREMENTS AND JUNCTION PERFORMANCE INDICATORS**

**THIS IS APPENDIX F TO PART 2 OF THE NEW WORKS REQUIREMENTS**

**PART 1:**

**PROCEDURE FOR DEMONSTRATING COMPLIANCE WITH THE JUNCTION  
REQUIREMENTS AND JUNCTION PERFORMANCE INDICATORS**

**PART 2:**

**JUNCTION PERFORMANCE INDICATORS**

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**APPENDIX F PART 1****PROCEDURE FOR DEMONSTRATING COMPLIANCE WITH THE JUNCTION REQUIREMENTS AND JUNCTION PERFORMANCE INDICATORS****Assessment Procedure**

The Company shall provide to the Contracting Authority, as part of ITS obligations under the Certification Procedure, the S-Paramics micro-simulation model(s) developed for the proposed scheme, the full log run folder outputs and the analysis Excel Workbook(s) to demonstrate compliance with the junction requirements set out in the Agreement and the Junction Performance Indicators in APPENDIX F PART 2.

The instructions regarding the extraction and analysis of the Junction Performance Indicators (“JPI”s) are outlined in Appendix G along with provision of the Junction Compliance Models. The process provides a consistent framework for the assessment of the operational performance of the Company’s scheme design, and shall compare this design against the benchmark of the values established within the JPIs given in APPENDIX F PART 2 with respect to:

1. Hourly flow rates (per approach arm);
2. Average and maximum queue lengths (per approach arm);
3. Average and maximum journey times (per movement through the junction);
4. Overall network statistics.

Each of these elements shall be submitted and assessed using the Excel Workbooks provided. The version of Microsoft Excel that is to be used for the analysis of the JPIs is Excel 2010.

For each junction model there is a separate JPI analysis Excel workbook, covering the above mentioned four JPI indicators. For all the eight junction models the specific workbook for each junction shall be used as per Table 1 below:

**Table 1: S-Paramics Junction Performance Model details**

| <b>Model</b>         | <b>Software Version</b> | <b>Main Junctions Within Model</b>             |
|----------------------|-------------------------|------------------------------------------------|
| A90N                 | 2005.1                  | A90N AWPR junction                             |
| A93                  | 2005.1                  | A93 Milltimber junction                        |
| A944                 | 2005.1                  | A944/AWPR                                      |
|                      |                         | North Kingswells                               |
| Charleston           | 2002.1                  | AWPR/A90 Junction                              |
| Cleanhill            | 2005.1                  | Fastlink/AWPR junction                         |
| Dyce                 | 2003.1                  | A947 Govel Junction                            |
|                      |                         | A96 Crabistone Junction                        |
| Stonehaven           | 2005.1                  | Fastlink/A90 Junction                          |
| Balmedie To Tippetry | 2012.1                  | Balmedie, A975 Newburgh and Tippetry Junctions |

**APPENDIX F PART 2**

## Part 2 Specific Requirements

## JUNCTION PERFORMANCE INDICATORS

This APPENDIX F PART 2 presents the required operational JPIs derived from analysing the results from the Scheme Specimen Design Model(s) that has been developed using various versions of S-Paramics microsimulation software (see Table 1 below).

The analysis workbooks, used to produce the JPIs from the model, are included as electronic files within the Information Room. Instructions on how to assess the junction performance of proposed junctions included in the New Works are contained within APPENDIX G.

For each junction, operational JPIs are required for two traffic forecast demand scenarios and separate analysis files are included in the Information Room. The first set of JPIs are required to meet or exceed the junction performance as assessed under the core scenario traffic forecasts extracted from the Aberdeen Sub-Area Model version 3B (ASAM3B). The second set of JPIs are required to optimise the junction performance under the sensitivity test scenario traffic forecasts extracted from Aberdeen Sub-Area Model version 4A (ASAM4A).

### JPI Definitions

The operational performance of the modelled area is based on the four sets of JPIs described in Appendix F Part 1, utilising the models described in Table 1 below. As noted above, there are two versions of each model, one based on ASAM3B and the other based on ASAM4A as noted in the previous paragraph.

**Table 1: S-Paramics Junction Performance Model details**

| Model                | Software Version | AM Peak          |                | PM Peak          |                |
|----------------------|------------------|------------------|----------------|------------------|----------------|
|                      |                  | Start time (hrs) | End time (hrs) | Start time (hrs) | End time (hrs) |
| A90N                 | 2005.1           | 0745             | 0945           | 1645             | 1845           |
| A93                  | 2005.1           | 0700             | 0915           | 1630             | 1845           |
| A944                 | 2005.1           | 0745             | 0945           | 1645             | 1845           |
| Charleston           | 2002.1           | 0630             | 0915           | 1600             | 1845           |
| Cleanhill            | 2005.1           | 0745             | 0930           | 1645             | 1830           |
| Dyce                 | 2003.1           | 0700             | 1000           | 1600             | 1900           |
| Stonehaven           | 2005.1           | 0700             | 1015           | 1600             | 1915           |
| Balmedie To Tippetry | 2012.1           | 0700             | 1000           | 1600             | 1900           |

*JPI1 – the peak traffic flow rate across the stop lines or give-way markings on each junction approach*

This is defined as the minimum peak hourly flow rate that must be met throughout the separate modelled periods on each junction approach arm. This JPI is to be derived by selecting the highest (peak) hourly flow value occurring on each junction approach in any individual hour within the separate modelled periods. For example, if the highest value on a particular approach is found to occur between 08:00hrs and 09:00hrs during the AM

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simulation, this is the final JPI result for the AM. The Company shall note that it will not necessarily be the case that the highest value will occur within the same individual hour for all junction approaches.

All flow rate thresholds shall be derived by averaging the log run results from 10 simulations per modelled period of the Scheme Model(s) [see table 1] being analysed.

*JPI2 – the average and maximum queue lengths allowed on each of the junction approach arms.*

The average queue length JPI is defined as the average queue length on each approach arm within each of the separate modelled periods. Unless otherwise agreed in writing by the Contracting Authority, all results shall be either no more than +10 per cent of the average queue length values in metres, or within two vehicle lengths (12m). These are tabulated in the supplied Excel Workbooks for each junction. The average queue length is output in five minute intervals for each approach arm. This interval is set within the model 'measurements' files, which shall not be revised or altered. Using the 'JPI 2 (Queues)' tab of the JPI Excel Workbook (the Excel JPI Workbook and its use is described in detail in Section G), the value for each five minute interval simulated within the modelled period is then averaged across the modelled period, and the result then averaged across each of the 10 simulation runs for the separate periods to generate the average queue length JPI values for each period.

The maximum queue length JPI is defined as the maximum queue length on each approach arm within each of the separate modelled periods. Unless otherwise agreed in writing by the Contracting Authority, all results shall be either no more than +10 per cent of the maximum queue length values in metres, or within two vehicle lengths (12m). These are tabulated in the supplied Excel Workbooks for each junction. The maximum queue length is output in five minute intervals for each approach arm. This interval is set within the model 'measurements' files, which shall not be revised or altered. Using the 'JPI 2 (Queues)' tabs of the JPI Excel Workbook (the Excel JPI Workbook and its use is described in detail in Section G), the maximum value from each period is averaged across each of the 10 simulation runs for the separate periods to generate the maximum queue length JPI values for each period.

The maximum and average queues are extracted from the Scheme Model(s) [see table 1] using the S-Paramics 'queue routes' function and a set of predefined queue paths in each of the junction models. It is likely that the defined 'Queue Routes' included in the models will require to be modified as necessary to reflect the Company's design. Should this be the case, the Company shall reset the 'Queue Routes' in the models such that they extend beyond the end of the modelled vehicle queues in the simulation model runs, and therefore record the maximum and average queue lengths correctly.

*JPI3 – the average and maximum journey time for each traffic movement (or vehicle path) passing through each junction*

The average journey time JPI is defined as the average journey time for all vehicles passing along each of the pre-defined journey paths over the separate modelled periods. Unless otherwise agreed in writing by the Contracting Authority, all results shall be either no more than +10 per cent of the average journey time values, or no more than +20 per cent if the journey time is under 150 seconds. These are tabulated in the supplied Excel Workbooks for each junction. The average journey time is output in five minute intervals for each journey path. This interval is set within the model 'measurements' files, which shall not be revised or altered. The journey time analysis tabs in the JPI Excel Workbook (this Excel Workbook and its use is described in detail in Appendix G) shall then be used to calculate the overall average journey time for each vehicle movement from the 10 simulation runs for each of the modelled periods to generate the average journey time JPI values for each period.

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The maximum journey time JPI is defined as the maximum journey time along each of the pre-defined journey paths over the separate modelled periods. Unless otherwise agreed in writing by the Contracting Authority, all results shall be either no more than +10 per cent of the maximum journey time values, or no more than +20 per cent if the journey time is under 150 seconds. These are tabulated in the supplied Excel Workbooks for each junction. The maximum journey time is output in five minute intervals for each journey path. This interval is set within the model 'measurements' files, which shall not be revised or altered. The journey time analysis tabs of the JPI Excel Workbook (this Excel Workbook and its use is described in detail in Appendix G) should then be used to calculate the maximum journey time for each vehicle movement averaged across the 10 simulation runs for each of the modelled periods to generate the maximum journey time JPI values for each period

It is likely that the defined 'Journey Paths' included in the models will require to be modified as necessary to reflect the Company's design. Should this be the case, the Company shall reset the 'Journey Paths' in the models such that they retain the same fixed start and end points as the defined journey paths.

*JPI4 – overall network operational performance statistics*

In addition to JPI1, 2 and 3 above, the overall network performance is defined through analysing the following model statistics. The supplied network statistics analysis Excel Workbooks shall be used to extract and analyse the overall model statistics separately for the AM and PM modelled periods. Further details and instructions on the use of the network statistics analysis Excel Workbook are presented in APPENDIX G.

The overall model performance statistics comprise:

- (i) mean network travel time (per vehicle);
- (ii) total network travel time (all vehicles)
- (iii) mean network speed (mph);
- (iv) total vehicles released by end of simulation;
- (v) vehicles on network at end of simulation; and,
- (vi) throughput by end of simulation (%).

The model statistics summarise the overall performance of the scheme model for each of the modelled periods.

**Model Files**

When using the supplied Scheme Specimen Design Models, no model files other than those specifically associated with the coding, testing and analysis of the Company's design proposals shall be modified or altered in any way. This includes, but is not necessarily limited to, the following model files:

- (i) Configuration files – 'configuration';
- (ii) Measurements file – 'measurements'
- (iii) Demand matrix files – 'demands'
- (iv) Demand release profiles file – 'profile'
- (v) Bus frequency data – 'busschedules';
- (vi) Bus stopping times – 'buspassengers';
- (vii) Demand profile assignment matrix – 'matrix'
- (viii) Time period settings – 'periods'

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- (ix) Vehicle type data – ‘vehicles7’
- (x) S-Paramics software version – ‘version’
- (xi) Zone data – ‘zones’
- (xii) Car Park data – ‘carparks’.

Those model files that are permissible to modify or revise if required, over and above those model files associated with coding the Company’s junction designs, are as follows (file name noted):

- (i) Queue length analysis routes – ‘queueroutes’;
- (ii) Journey time path files (but not the start / end points of each path) – ‘paths’; and
- (iii) Bus route files (but not the start / end points of each bus route) – ‘busroutes’.



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**APPENDIX G - CONTRACT JUNCTION COMPLIANCE TRAFFIC MODELS  
AND ASSOCIATED INSTRUCTIONS AND ANALYSIS WORKBOOKS**

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## Part 2 Specific Requirements

**APPENDIX G****CONTRACT JUNCTION COMPLIANCE TRAFFIC MODELS  
AND ASSOCIATED INSTRUCTIONS AND ANALYSIS WORKBOOKS**

The following Contract Junction Compliance Models are provided, each with two variants of Aberdeen Sub-Area Model demand as per APPENDIX F PART 2:

- (i) A90N AWPR Scheme Specimen Design Model 2027 ASAM3B, and A90N AWPR Scheme Specimen Design Model 2033 ASAM4A;
- (ii) A93 AWPR Scheme Specimen Design Model 2027 ASAM3B, and A93 AWPR Scheme Specimen Design Model 2033 ASAM4A;
- (iii) A944 AWPR Scheme Specimen Design Model 2027 ASAM3B, and A944 AWPR Scheme Specimen Design Model 2033 ASAM4A;
- (iv) Charleston AWPR Scheme Specimen Design Model 2027 ASAM3B, and Charleston AWPR Scheme Specimen Design Model 2033 ASAM4A;
- (v) Cleanhill AWPR Scheme Specimen Design Model 2027 ASAM3B, and Cleanhill AWPR Scheme Specimen Design Model 2033 ASAM4A;
- (vi) Dyce AWPR Scheme Specimen Design Model 2027 ASAM3B, and Dyce AWPR Scheme Specimen Design Model 2033 ASAM4A; and,
- (vii) Stonehaven AWPR Scheme Specimen Design Model 2027 ASAM3B, and Stonehaven AWPR Scheme Specimen Design Model 2033 ASAM4A.
- (viii) Balmedie to Tippetry AWPR Scheme Specimen Design Model 2033.

There are two sets of analysis workbooks provided for the AWPR junction models, one set for each Aberdeen Sub-Area Model demand version. There is one set of analysis workbooks provided for the Balmedie to Tippetry junction model for the single demand scenario. The following analysis workbooks are provided for each demand version, which define the associated JPI values to be achieved and perform the required analysis:

| <b>Model</b>          | <b>Software Version</b> | <b>Main Junctions Within Model</b>             |
|-----------------------|-------------------------|------------------------------------------------|
| A90N                  | 2005.1                  | A90N AWPR junction                             |
| A93                   | 2005.1                  | A93 Milltimber junction                        |
| A944                  | 2005.1                  | A944/AWPR                                      |
|                       |                         | North Kingswells                               |
| Charleston            | 2002.1                  | AWPR/A90 Junction                              |
| Cleanhill             | 2005.1                  | Fastlink/AWPR junction                         |
| Dyce                  | 2003.1                  | A947 Goval Junction                            |
|                       |                         | A96 Craibstone Junction                        |
| Stonehaven            | 2005.1                  | Fastlink/A90 Junction                          |
| Balmeadie To Tippetry | 2012.1                  | Balmedie, A975 Newburgh and Tippetry Junctions |

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All model coding, running, analysis and any other associated modelling work shall be undertaken using S-Paramics Version 2005.1 for the A90, A93, A944, Cleanhill and Stonehaven models. Whereas S-Paramics Version 2003.1 shall be used for Dyce and S-Paramics Version 2002.1 shall be used for Charleston. For clarity, these are noted in Table 2 below.

| Model                | Software Version |
|----------------------|------------------|
| A90N                 | 2005.1           |
| A93                  | 2005.1           |
| A944                 | 2005.1           |
| Charleston           | 2002.1           |
| Cleanhill            | 2005.1           |
| Dyce                 | 2003.1           |
| Stonehaven           | 2005.1           |
| Balmedie to Tippetty | 2012.1           |

For the extraction of the Junction Performance Indicators and the completion of the analysis Excel Workbooks by the Company, it is a requirement that 10 simulation runs of each of modelled period are undertaken. Each model simulation run shall be undertaken using the preset configuration and measurement files supplied with the original model. To run the AM period, the AM model variant should be used and to run the PM period the PM model variant should be used.

Model outputs should be saved in the model log directory, in sub directories named 'run-001' through to 'run-010'.

The Company shall undertake a review of the modelled snapshots from each model run prior to undertaking any analysis, to ensure that overall network performance looks satisfactory compared to the provided Scheme Specimen Design Models. Collection of model snapshots in 15 minute intervals is defined in the measurements file provided.

The Company shall also undertake a "logic check" on the variations between different model runs to ensure that no individual model run skews the results due to localised congestion.

### Collating data into the JPI Workbooks

All JPI data shall be extracted from the S-Paramics model output using the Excel JPI Workbooks, titled as follows:

For the 2027 model scenario, the following spreadsheets shall be used, note that Balmedie to Tippetty is not assessed using the 2027 scenario:

- A90\_JPIs\_2027.xlsm;
- A93\_JPIs\_2027.xlsm;
- A944\_JPIs\_2027.xlsm;
- Charleston\_JPIs\_2027.xlsm;
- Cleanhill\_JPIs\_2027.xlsm;

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- Dyce\_JPIs\_2027.xlsm; and
- Stonehaven\_JPIs\_2027.xlsm.

For the 2033 model scenario, the following spreadsheets shall be used:

- A90\_JPIs\_2033.xlsm;
- A93\_JPIs\_2033.xlsm;
- A944\_JPIs\_2033.xlsm;
- Charleston\_JPIs\_2033.xlsm;
- Cleanhill\_JPIs\_2033.xlsm;
- Dyce\_JPIs\_2033.xlsm;
- Stonehaven\_JPIs\_2033.xlsm;
- Balmedie – Tipperty\_Flows.xlsm;
- Balmedie – Tipperty\_Queues Avg.xlsm;
- Balmedie – Tipperty\_Queues Max.xlsm;
- Balmedie – Tipperty\_JT Avg.xlsm;
- Balmedie – Tipperty\_JT Max.xlsm; and
- Balmedie – Tipperty\_Network Stats.xlsm.

The following data extraction process for collation of the Junction Performance Indicator data into the Excel Workbooks shall be followed:

- (a) Upon opening the relevant Excel Workbook for each period, the user may be asked if macros are to be enabled. 'Enable Macros' should be clicked to confirm
- (b) The computer folder location where each of the junction models are stored should be defined in the 'links' tab, in cells F4 to F13 for the AM peak period models and cells F14 to F23 for the PM peak period models.
- (c) The button labelled "Delete and Refresh ALL" in the 'button' tab should be clicked to import and analyse the data from each of the 10 AM and PM model runs.

Upon completion of the above, it is recommended the Excel Workbook shall be saved.

### **Link Flow Analysis (JPI1)**

After the data has been collated into the workbook, the next steps highlight the method to undertake the **model flow** Junction Performance Indicator check. The tab 'JPI 1 (Flow)' compares the Company's model values to those from the Scheme Specimen Design Model. The worksheet indicates if the performance of the Company's model is satisfactory for each junction approach included.

Upon completion of the above analysis, the Excel Workbook shall be saved.

### **Average and Maximum Queue Length Analysis (JPI2)**

After the data has been collated into the workbook, the next steps highlight the method to undertake the **model average and maximum queue** Junction Performance Indicator check. The tab 'JPI 2 (Queues)' compares the Company's model values to those from the Scheme Specimen Design Model. The worksheet indicates if the performance of the Company's model is satisfactory for each junction approach included.

Upon completion of the above analysis, the Excel Workbook shall be saved.

### **Average and Maximum Journey Time Analysis (JPI3)**

After the data has been collated into the workbook, the next steps highlight the method to undertake the **model average and maximum journey time** Junction Performance Indicator check. The tab 'JPI 3 (Journey Time)' compares the Company's model values to those from the Scheme Specimen Design Model. The worksheet indicates if the performance of the Company's model is satisfactory for each journey time route defined.

Upon completion of the above analysis, the Excel Workbook shall be saved.

### **Overall Network Statistics (JPI4)**

After the data has been collated into the workbook, the next steps highlight the method to undertake the **model network statistics** Junction Performance Indicator check. The tab 'JPI 4 (Network Stats)' compares the Company's model values to those from the Scheme Specimen Design Model. This check is present to provide an overall indication of model performance against the specimen design.

Upon completion of the above analysis, the Excel workbook shall be saved.

**APPENDIX H - REQUIREMENTS FOR PRINCIPAL STRUCTURES**

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## Part 2 Specific Requirements

| Structure Reference Number | Structure Title       | Structure Reference Drawings | Description and Purpose of Structure                            | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                             | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-----------------------|------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C01                        | Megray Burn Culvert 1 | B1033200 /CD/REF/ ST/002     | New structure to carry the A90 over Megray Burn                 | <u>A90 over Northbound</u><br>Verge – 2.5m<br>Carriageway – 10.5m<br>Central island – varies<br><br><u>A90 over Southbound</u><br>Carriageway – 10.5m<br>Diverge - varies<br>Hardstrip – 2.0m<br>Verge – 7.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |
| C01A                       | Megray Burn Culvert 2 | B1033200 /CD/REF/ ST/002     | New structure to carry A90 embankment and PS01 over Megray Burn | <u>N/A</u>                                                                                                                                                                                                                                                | 3                     | None                                                                           | None                                         | None                                                         | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                | Structure Reference Drawings | Description and Purpose of Structure                         | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                                                                       | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                    |
|----------------------------|--------------------------------|------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| PS01                       | B979 Netherley Road Overbridge | B1033200 /CD/REF/ST/001      | New structure to carry the A90 over the B979 Netherley Road. | <u>A90 over Eastbound</u><br>Verge – 2.5m<br>Slip road – 3.6m<br>Carriageway – 7.3m<br>Central reserve – 4.5m<br><br><u>A90 over Westbound</u><br>Carriageway – 7.3m<br>Verge – 2.5m<br><br><u>Side Road under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>Side Road under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom - 5.3m | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | AWPR Communications – 4x100mm ducts in northbound verge<br><br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title         | Structure Reference Drawings | Description and Purpose of Structure             | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                            | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided |
|----------------------------|-------------------------|------------------------------|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|------------------------------------------|
| PS02                       | Limpet Burn Underbridge | B1033200 /CD/REF/ ST/001     | New structure to carry the A90 over Limpet Burn. | <u>Fastlink over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>Fastlink over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB. | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                                     | Structure Reference Drawings   | Description and Purpose of Structure                               | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided |
|----------------------------|-----------------------------------------------------|--------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|------------------------------------------|
| PS03                       | U89K<br>Auquorthies to Ury Road<br>NMU<br>Underpass | B1033200<br>/CD/REF/<br>ST/001 | New structure to carry the A90 over Auquorthies to Ury Road (U89K) | <u>Fastlink over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>Fastlink over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road under</u><br>Verge – 1.5m<br>Carriageway – 3.0m<br>Verge – 0.5m<br><br>Headroom – 2.7m | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB. | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                                       | Structure Reference Drawings | Description and Purpose of Structure                                       | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided                                                                    |
|----------------------------|-------------------------------------------------------|------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| PS04                       | U88K<br>Fishermyle to Clayfolds Side Road Underbridge | B1033200 /CD/REF/ST/001      | New structure to carry the A90 over Fishermyle to Clayfolds Road (U88K)    | <u>Fastlink over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>Fastlink over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road under</u><br>Verge – 2.5m<br>Carriageway – 6.0m<br>Verge – 2.5m<br><br>Headroom – 5.3m | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB. | AWPR Communications – 4x100mm ducts in northbound verge<br><br>General – 2x100mm spare ducts in both verges |
| C02                        | Green Burn Culvert 1                                  | B1033200 /CD/REF/ST/002      | New structure to carry Fishermyle to Clayfolds Road (U88K) over Green Burn | <u>Side Road over</u><br>Verge – 2.5m<br>Carriageway – 6.6m<br>Verge – 2.5m<br><br>Headroom – as required by the Design                                                                                                                                                                                                                                                 | 3                     | LM1 and LM2 loading.                                                           | SV100<br>SV80                                | Vehicle restraint system in accordance with TD19 of the DMRB  | No specific requirements                                                                                    |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title      | Structure Reference Drawings | Description and Purpose of Structure           | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                  | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|----------------------|------------------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C03                        | Green Burn Culvert 2 | B1033200 /CD/REF/ ST/002     | New structure to carry the A90 over Green Burn | <p><u>Fastlink over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>Fastlink over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                      | Structure Reference Drawings | Description and Purpose of Structure                      | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|--------------------------------------|------------------------------|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| PS05                       | Allochie Access Track Farm Underpass | B1033200 /CD/REF/ST/001      | New structure to carry the A90 over Allochie Access Track | <u>Fastlink over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>Fastlink over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road under</u><br>Verge – 1.5m<br>Carriageway – 4.0m<br>Verge – 1.0m<br><br>Headroom – 4.3m | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |



## Part 2 Specific Requirements

| Structure Reference Number | Structure Title              | Structure Reference Drawings | Description and Purpose of Structure                 | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                            | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided |
|----------------------------|------------------------------|------------------------------|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|------------------------------------------|
| PS06                       | Burn of Muchalls Underbridge | B1033200 /CD/REF/ ST/001     | New structure to carry the A90 over Burn of Muchalls | <u>Fastlink over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>Fastlink over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB. | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                                      | Structure Reference Drawings | Description and Purpose of Structure                                          | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                    | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided                                                                                                               |
|----------------------------|------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS07                       | C12K Bridge of Muchalls to Netherley Road Overbridge | B1033200 /CD/REF/ST/001      | New structure to carry C12K Bridge of Muchalls to Netherley Road over the A90 | <u>Fastlink under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><u>Fastlink under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><u>Side Road over</u><br>Verge – 2.5m<br>Carriageway – 6.0m<br>Verge – 2.5m<br><br>Headroom – 5.3m | 3                     | LM1 and LM2 loading.                                                           | SV100<br>SV80                                | Vehicle restraint system in accordance with TD19 of the DMRB. | BT<br>Openreach - 1x110mm duct in south verge<br><br>Scottish Water - 2x200mm ducts in south verge<br><br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                           | Structure Reference Drawings | Description and Purpose of Structure                               | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                        | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided                                                                                                                   |
|----------------------------|-------------------------------------------|------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS08                       | C25K Muchalls to Burnhead Road Overbridge | B1033200 /CD/REF/ST/001      | New structure to carry C25K Muchalls to Burnhead Road over the A90 | <p><u>Fastlink under Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>Fastlink under Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p><u>Side Road over</u></p> <p>Verge – 2.5m<br/>Carriageway – 6.0m<br/>Verge – 2.5m</p> <p>Headroom – 5.3m</p> | 3                     | LM1 and LM2 loading.                                                           | SV100<br>SV80                                | Vehicle restraint system in accordance with TD19 of the DMRB. | <p>BT Openreach - 1x110mm duct in south verge</p> <p>Scottish Water - 2x350mm ducts in south verge</p> <p>General – 2x100mm spare ducts in both verges</p> |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title               | Structure Reference Drawings | Description and Purpose of Structure                                           | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                  | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-------------------------------|------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C04                        | North Cookney Ditch Culvert 1 | B1033200 /CD/REF/ ST/002     | New structure to carry the A90 over North Cookney Ditch                        | <p><u>Fastlink over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>Fastlink over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |
| C05                        | North Cookney Ditch Culvert 2 | B1033200 /CD/REF/ ST/002     | New structure to carry C25K Muchalls to Burnhead Road over North Cookney Ditch | <p><u>Side Road over</u></p> <p>Verge – 2.5m<br/>Carriageway – 6.0m<br/>Verge – 2.5m</p> <p>Headroom – as required by the Design</p>                                                                                                                                                                                           | 3                     | LM1 and LM2 loading.                                                           | SV100<br>SV80                                | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title               | Structure Reference Drawings | Description and Purpose of Structure                                            | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                            | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-------------------------------|------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C05A                       | North Cookney Ditch Culvert 3 | B1033200 /CD/REF/ST/002      | New structure to carry C25K Muchalls to Burnhead Road over North Cookney Ditch. | <u>Side Road over</u><br>Verge – 2.5m<br>Carriageway – 6.0m<br>Verge – 2.5m<br><br>Headroom – as required by the Design                                                                                                                                                                                  | 3                     | LM1 and LM2 loading.                                                           | SV100<br>SV80                                | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |
| C06                        | Stoneyhill Burn Culvert       | B1033200 /CD/REF/ST/002      | New structure to carry the A90 over Stoneyhill Burn                             | <u>Fastlink over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>Fastlink over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

Part 2 Specific Requirements

| Structure Reference Number | Structure Title          | Structure Reference Drawings | Description and Purpose of Structure              | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                                                                     | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|--------------------------|------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C07                        | Balnagubs Burn Culvert 1 | B1033200 /CD/REF/ST/002      | New structure to carry the A90 over Balnagub Burn | <p><u>Fastlink over Northbound</u></p> <p>Verge – 2.5m<br/>                     Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Central reserve – 2.5m</p> <p><u>Fastlink over Southbound</u></p> <p>Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Verge – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |
|                            |                          |                              |                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                                                                                |                                              |                                                              |                                          |

Part 2 Specific Requirements

| Structure Reference Number | Structure Title        | Structure Reference Drawings | Description and Purpose of Structure                   | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|------------------------|------------------------------|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C08                        | Burn of Elsick Culvert | B1033200 /CD/REF/ ST/002     | New structure to carry the A90 over the Burn of Elsick | <p><u>Fastlink over Northbound</u></p> <p>Verge – 2.5m<br/>                     Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Central reserve – 2.5m</p> <p><u>Fastlink over Southbound</u></p> <p>Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Verge – 2.5m</p> <p><u>Side Road over</u></p> <p>Verge – 1.0m<br/>                     Carriageway – 4.0m<br/>                     Verge – 1.0m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                                | Structure Reference Drawings | Description and Purpose of Structure                                      | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                        | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                                   |
|----------------------------|------------------------------------------------|------------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS09                       | C13K Lairhillock to Portlethen Road Overbridge | B1033200 /CD/REF/ST/001      | New structure to carry Lairhillock to Portlethen Road (C13K) over the A90 | <p><u>Fastlink under Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>Fastlink under Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p><u>Side Road over</u></p> <p>Verge – 2.5m<br/>Carriageway – 6.0m<br/>Verge – 2.5m</p> <p>Headroom – 5.3m</p> | 3                     | LM1 and LM2 loading.                                                           | SV100<br>SV80                                | Vehicle restraint system in accordance with TD19 of the DMRB | <p>BT Openreach - 1x110mm duct in north verge</p> <p>Scottish Water - 2x200mm ducts in north verge</p> <p>General – 2x100mm spare ducts in both verges</p> |



## Part 2 Specific Requirements

| Structure Reference Number | Structure Title        | Structure Reference Drawings | Description and Purpose of Structure               | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|------------------------|------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C09                        | Whiteside Burn Culvert | B1033200 /CD/REF/ST/002      | New structure to carry the A90 over Whiteside Burn | <p><u>Fastlink over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>Fastlink over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p><u>Side Road over</u></p> <p>Verge – 1.0m<br/>Carriageway – 4.0m<br/>Verge – 1.0m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title       | Structure Reference Drawings | Description and Purpose of Structure              | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                  | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-----------------------|------------------------------|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C10                        | Crossley Burn Culvert | B1033200 /CD/REF/ ST/002     | New structure to carry the A90 over Crossley Burn | <p><u>Fastlink over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>Fastlink over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                                         | Structure Reference Drawings | Description and Purpose of Structure                                       | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                    |
|----------------------------|---------------------------------------------------------|------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| PS10                       | C5K Lochton to Auchlunies to Nigg Side Road Underbridge | B1033200 /CD/REF/ST/001      | New structure to carry the A90 over C5K Lochton to Auchlunies to Nigg Road | <u>Fastlink over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>Fastlink over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road under</u><br>Verge – 2.5m<br>Carriageway – 6.0m<br>Verge – 2.5m<br><br>Headroom – 5.3m | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | AWPR Communications – 4x100mm ducts in northbound verge<br><br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title         | Structure Reference Drawings | Description and Purpose of Structure                | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-------------------------|------------------------------|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C11                        | Craigheath Burn Culvert | B1033200 /CD/REF/ST/002      | New structure to carry the A90 over Craigheath Burn | <p><u>Fastlink over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>Fastlink over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p><u>Side Road over</u></p> <p>Verge – 1.0m<br/>Carriageway – 4.0m<br/>Verge – 1.0m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title              | Structure Reference Drawings | Description and Purpose of Structure                 | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                         | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided                                                                                                                          |
|----------------------------|------------------------------|------------------------------|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS11                       | Blaikiewell Burn Underbridge | B1033200 /CD/REF/ST/001      | New structure to carry the A90 over Blaikiewell Burn | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p>Headroom on the South of Blaikiewell Burn – 2.7m over 3m width. Headroom otherwise as required by the Design.</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB. | <p>AWPR Communications – 4x100mm ducts in northbound verge</p> <p>Lighting – 2x100mm ducts in both verges</p> <p>General – 2x100mm spare ducts in both verges</p> |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                       | Structure Reference Drawings | Description and Purpose of Structure                     | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                         | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided                                                                                                                   |
|----------------------------|---------------------------------------|------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS12                       | U63K Maryculter Side Road Underbridge | B1033200 /CD/REF/ST/001      | New structure to carry the A90 over U63K Maryculter Road | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road under</u><br>Verge – 1.5m<br>Carriageway – 4.5m<br>Verge – 1.5m<br><br>Headroom – 5.3m | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB. | AWPR Communications – 4x100mm ducts in northbound verge<br><br>Lighting – 2x100mm ducts in both verges<br><br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                | Structure Reference Drawings | Description and Purpose of Structure         | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                      | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided |
|----------------------------|--------------------------------|------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|------------------------------------------|
| PS13                       | Kingcausie Wildlife Overbridge | B1033200 /CD/REF/ ST/001     | New structure to carry wildlife over the A90 | <u>under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Over</u><br>Verge – 0.6m<br>Landscaped verge – 7.5m<br>Verge – 0.6m<br><br>Headroom – 6.45m | 3                     | None                                                                           | None                                         | Vehicle restraint system in accordance with TD19 of the DMRB. | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                                    | Structure Reference Drawings | Description and Purpose of Structure                                    | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                        | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|----------------------------------------------------|------------------------------|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| PS14                       | Kingcausie and Eastland Access Road Farm Underpass | B1033200 /CD/REF/ST/001      | New structure to carry the A90 over Kingcausie and Eastland Access Road | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road under</u><br>Verge – 1.0m<br>Carriageway – 4.0m<br>Verge – 1.0<br><br>Headroom – 4.3m | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |



## Part 2 Specific Requirements

| Structure Reference Number | Structure Title         | Structure Reference Drawings | Description and Purpose of Structure                | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-------------------------|------------------------------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C12                        | Kingcausie Burn Culvert | B1033200 /CD/REF/ ST/002     | New structure to carry the A90 over Kingcausie Burn | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title    | Structure Reference Drawings | Description and Purpose of Structure              | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                          | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                                                              | Service and Service Ducts to be provided                                                                           |
|----------------------------|--------------------|------------------------------|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| PS15                       | River Dee Crossing | B1033200 /CD/REF/ST/001      | New structure to carry the A90 over the River Dee | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p><u>Headroom</u></p> <p>Kingcausie Access Track – 5.3m</p> <p>B9077 – 5.3m</p> <p>Milltimber Retention Pond Access Track – 5.3m</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Open steel parapets of post and rail type with H4a containment in accordance with TD19 of the DMRB | <p>AWPR Communications – 4x100mm ducts in northbound verge</p> <p>General – 2x100mm spare ducts in both verges</p> |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title           | Structure Reference Drawings | Description and Purpose of Structure                                               | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|---------------------------|------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C13                        | Milltimber Burn Culvert 1 | B1033200 /CD/REF/ ST/002     | New structure to carry the A90 over Milltimber Burn                                | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |
| C13A                       | Milltimber Burn Culvert 2 | B1033200 /CD/REF/ ST/002     | New structure to carry Milltimber Retention Pond Access Track over Milltimber Burn | <p><u>Side Road over</u></p> <p>Verge – 1.0m<br/>Carriageway – 4.0m<br/>Verge – 1.0m</p> <p>Headroom – as required by the Design</p>                                                                                                                                                                         | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title            | Structure Reference Drawings | Description and Purpose of Structure                | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                       | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                          |
|----------------------------|----------------------------|------------------------------|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| PS16                       | Milltimber Brae Overbridge | B1033200 /CD/REF/ST/001      | New structure to carry Milltimber Brae over the A90 | <u>under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road over</u><br>South Verge – 3.5m<br>Carriageway – 6.0m<br>North Verge – 2.0m<br><br>Headroom – 6.45m | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Vehicle restraint system in accordance with TD19 of the DMRB | BT<br>Openreach - 4x110mm ducts in north verge<br><br>Lighting – 2x100mm ducts in north verge<br><br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                   | Structure Reference Drawings | Description and Purpose of Structure                       | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided                                                                                                                                                                                                                                                   |
|----------------------------|-----------------------------------|------------------------------|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS17                       | A93 North Deeside Road Overbridge | B1033200 /CD/REF/ST/001      | New structure to carry A93 North Deeside Road over the A90 | <u>under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road over</u><br>Verge – 2.0m<br>Carriageway – 7.3m<br>Verge – 2.0m<br><br>Headroom – 6.45m | 3                     | LM1 and LM2 loading.                                                           | SV100<br>SV80                                | Vehicle restraint system in accordance with TD19 of the DMRB. | BT<br>Openreach - 10x110mm ducts in north verge<br><br>Scottish and Southern Energy – 3x150 ducts in south verge<br><br>Lighting – 2x100mm ducts in both verges<br><br>General – 2x100mm spare ducts in both verges<br><br>Scottish Water – 2x800mm ducts and 2x200mm ducts in south verge |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title             | Structure Reference Drawings | Description and Purpose of Structure                                                       | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                      | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                                                      | Service and Service Ducts to be provided |
|----------------------------|-----------------------------|------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------|
| RW01                       | Milltimber Retaining Wall   | B1033200 /CD/REF/ST/001      | New structure to reduce land acquisition adjacent to the southbound carriageway of the A90 | <u>adjacent Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>adjacent Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m | 3                     | LM1 loading.                                                                   | None                                         | Vehicle or pedestrian restraint system as appropriate in accordance with TD19 of the DMRB. | No specific requirements                 |
| RW02                       | Kippie Lodge Retaining Wall | B1033200 /CD/REF/ST/001      | New structure to reduce land acquisition adjacent to to northbound side of the A93         | <u>adjacent Side Road</u><br>Verge – 2.5m<br>Carriageway – 7.3m<br>Verge – 2.5m                                                                                                                                                                    | 3                     | LM1 loading.                                                                   | None                                         | Vehicle or pedestrian restraint system as appropriate in accordance with TD19 of the DMRB. | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                | Structure Reference Drawings | Description and Purpose of Structure                                    | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided                                                                                                              |
|----------------------------|--------------------------------|------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS18                       | Milltimber Junction Overbridge | B1033200 /CD/REF/ ST/001     | New structure to carry dual carriageway junction link road over the A90 | <p><u>under Northbound</u></p> <p>Verge – 2.5m<br/>Diverge – 7.0m<br/>Hardstrip – 1.0m<br/>Verge – varies<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>under Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – varies<br/>Merge – 7.0m<br/>Verge – 2.5m</p> <p><u>Side Road over</u></p> <p>Verge – 2.5m<br/>Carriageway – 7.7m<br/>Central reserve – 2.5m<br/>Carriageway – 7.7m<br/>Verge – 4.5m</p> <p>Headroom – 6.45m</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB. | <p>BT Openreach - 2x110mm ducts in south verge</p> <p>Lighting – 2x100mm ducts in both verges</p> <p>General – 2x100mm spare ducts in both verges</p> |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title         | Structure Reference Drawings | Description and Purpose of Structure             | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided                                                                                                                           |
|----------------------------|-------------------------|------------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS19                       | Contlaw Road Overbridge | B1033200 /CD/REF/ST/001      | New structure to carry Contlaw Road over the A90 | <u>under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road over</u><br>Verge – 2.0m<br>Carriageway – 6.0m<br>Verge – 2.0m<br><br>Headroom – 6.45m | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Vehicle restraint system in accordance with TD19 of the DMRB. | BT<br>Openreach - 1x110mm duct in north verge<br><br>Scottish Water - 2x250mm and 2x400mm ducts in south verge<br><br>General – 2x100mm spare ducts in both verges |



## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                       | Structure Reference Drawings | Description and Purpose of Structure                       | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                         | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided |
|----------------------------|---------------------------------------|------------------------------|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|------------------------------------------|
| PS20                       | Beanshill Access Track Farm Underpass | B1033200 /CD/REF/ST/001      | New structure to carry the A90 over Beanshill Access Track | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road under</u><br>Verge – 1.5m<br>Carriageway – 4.0m<br>Verge – 0.5m<br><br>Headroom – 4.3m | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB. | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                                    | Structure Reference Drawings | Description and Purpose of Structure                                     | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                     | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                           |
|----------------------------|----------------------------------------------------|------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| PS21                       | C127K Wester Ord to Blacktop Side Road Underbridge | B1033200 /CD/REF/ ST/001     | New structure to carry the A90 over C127K Wester Ord to Blacktop Road    | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p><u>Side Road under</u></p> <p>Verge – 2.5m<br/>Carriageway – 6.0m<br/>Verge – 2.5m</p> <p>Headroom – 5.3m</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | <p>AWPR Communications – 4x100mm ducts in northbound verge</p> <p>General – 2x100mm spare ducts in both verges</p> |
| C14                        | Gairn Burn Culvert 2                               | B1033200 /CD/REF/ ST/002     | New structure to carry C127K Wester Ord to Blacktop Road over Gairn Burn | <p><u>Side Road over</u></p> <p>Verge – 2.5m<br/>Carriageway – 6.0m<br/>Verge – 2.5m</p> <p>Headroom – as required by the Design</p>                                                                                                                                                                                                                                              | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                                                                                           |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                        | Structure Reference Drawings | Description and Purpose of Structure                               | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                         | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided |
|----------------------------|----------------------------------------|------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|------------------------------------------|
| C14A                       | Gairn Burn Culvert 1                   | B1033200 /CD/REF/ST/002      | New structure to carry Silverburn Pond Access Road over Gairn Burn | <u>Side Road over</u><br>Verge – 1.0m<br>Carriageway – 4.0m<br>Verge – 1.0m<br><br>Headroom – as required by the Design                                                                                                                                                                                                                               | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Vehicle restraint system in accordance with TD19 of the DMRB  | No specific requirements                 |
| PS22                       | Gairn Farm Access Track Farm Underpass | B1033200 /CD/REF/ST/001      | New structure to carry the A90 over Gairn Farm Access Track        | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road under</u><br>Verge – 1.5m<br>Carriageway – 4.0m<br>Verge – 0.5m<br><br>Headroom – 4.3m | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB. | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title         | Structure Reference Drawings | Description and Purpose of Structure                    | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                         | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-------------------------|------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C15                        | Moss of Auchlea Culvert | B1033200 /CD/REF/ST/002      | New structure to carry the A90 over the Moss of Auchlea | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p><u>Side Road over</u></p> <p>Verge – 1.0m<br/>Carriageway – 4.0m<br/>Verge – 1.0m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                                    | Structure Reference Drawings | Description and Purpose of Structure                                                              | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                         | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided                                                                          |
|----------------------------|----------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| PS23                       | A944 South Kingswells Junction Underbridge (South) | B1033200 /CD/REF/ST/001      | New structure to carry the A90 over the south of the junction roundabout between the A90 and A944 | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road under</u><br>Verge – 2.5m<br>Carriageway – 11.0m<br>Verge – 2.5<br><br>Headroom – 5.3m | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB. | AWPR Communications –<br>4x100mm ducts in northbound verge<br><br>General –<br>2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                                    | Structure Reference Drawings | Description and Purpose of Structure                                                              | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                         | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided                                                                          |
|----------------------------|----------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| PS24                       | A944 South Kingswells Junction Underbridge (North) | B1033200 /CD/REF/ST/001      | New structure to carry the A90 over the north of the junction roundabout between the A90 and A944 | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road under</u><br>Verge – 3.5m<br>Carriageway – 11.0m<br>Verge – 2.5<br><br>Headroom – 5.3m | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB. | AWPR Communications –<br>4x100mm ducts in northbound verge<br><br>General –<br>2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                         | Structure Reference Drawings | Description and Purpose of Structure                             | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided     |
|----------------------------|-----------------------------------------|------------------------------|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|----------------------------------------------|
| PS25                       | Fairley Cloghill Access Road Overbridge | B1033200 /CD/REF/ST/001      | New structure to carry Fairley Cloghill Access Road over the A90 | <u>under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road over</u><br>Verge – 2.0m<br>Carriageway – 3.0m<br>Verge – 2.0m<br><br>Headroom – 6.45m | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Vehicle restraint system in accordance with TD19 of the DMRB. | General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                | Structure Reference Drawings | Description and Purpose of Structure                    | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided                                                          |
|----------------------------|--------------------------------|------------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| PS26                       | Derbeth Access Road Overbridge | B1033200 /CD/REF/ ST/001     | New structure to carry Derbeth Access Road over the A90 | <u>under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road over</u><br>Verge – 2.0m<br>Carriageway – 6.0m<br>Verge – 2.0m<br><br>Headroom – 6.45m | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Vehicle restraint system in accordance with TD19 of the DMRB. | BT<br>Openreach - 1x110mm duct in north verge<br><br>General – 2x100mm spare ducts in both verges |



Part 2 Specific Requirements

| Structure Reference Number | Structure Title       | Structure Reference Drawings | Description and Purpose of Structure              | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                                                   | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-----------------------|------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C16                        | Burnhead Burn Culvert | B1033200 /CD/REF/ ST/002     | New structure to carry the A90 over Burnhead Burn | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>                     Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Verge – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                                   | Structure Reference Drawings | Description and Purpose of Structure                                       | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                             |
|----------------------------|---------------------------------------------------|------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS27                       | C5K Lochton to Auchlunies to Nigg Road Overbridge | B1033200 /CD/REF/ ST/001     | New structure to carry C5K Lochton to Auchlunies to Nigg Road over the A90 | <u>under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road over</u><br>Verge – 2.5m<br>Carriageway – 6.0m<br>Verge – 2.5m<br><br>Headroom – 6.45m | 3                     | LM1 and LM2 loading.                                                           | SV100<br>SV80                                | Vehicle restraint system in accordance with TD19 of the DMRB | BT<br>Openreach - 1x110mm duct in east verge<br><br>Scottish Water - 2x250mm ducts in west verge<br><br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title         | Structure Reference Drawings | Description and Purpose of Structure                                           | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                         | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-------------------------|------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C17                        | Whitestone Burn Culvert | B1033200 /CD/REF/ ST/002     | New structure to carry the A90 and Burnhead East Footpath over Whitestone Burn | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p><u>Side Road over</u></p> <p>Verge – 0.5m<br/>Carriageway – 3.0m<br/>Verge – 0.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                           | Structure Reference Drawings | Description and Purpose of Structure                               | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided                                                                                                             |
|----------------------------|-------------------------------------------|------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS28                       | C30K Hillside to Batchart Road Overbridge | B1033200 /CD/REF/ST/001      | New structure to carry C30K Hillside to Batchart Road over the A90 | <u>under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road over</u><br>Verge – 2.5m<br>Carriageway – 6.0m<br>Verge – 2.5m<br><br>Headroom – 6.45m | 3                     | LM1 and LM2 loading.                                                           | SV100<br>SV80                                | Vehicle restraint system in accordance with TD19 of the DMRB. | BT<br>Openreach - 1x110mm duct in west verge<br><br>Scottish Water - 2x250mm ducts in west verge<br><br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                                       | Structure Reference Drawings | Description and Purpose of Structure                                         | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                         | Service and Service Ducts to be provided                                                         |
|----------------------------|-------------------------------------------------------|------------------------------|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| PS29                       | U59K Banchory / Devenick to Sunnyside Road Overbridge | B1033200 /CD/REF/ ST/001     | New structure to carry U59K Banchory/Devenick to Sunnyside Road over the A90 | <u>under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road over</u><br>Verge – 2.0m<br>Carriageway – 4.0m<br>Verge – 2.0m<br><br>Headroom – 6.45m | 3                     | LM1 and LM2 loading.                                                           | SV100<br>SV80                                | Vehicle restraint system in accordance with TD19 of the DMRB. | BT<br>Openreach - 1x110mm duct in east verge<br><br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title         | Structure Reference Drawings | Description and Purpose of Structure                | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-------------------------|------------------------------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C18                        | Heathfield Burn Culvert | B1033200 /CD/REF/ ST/002     | New structure to carry the A90 over Heathfield Burn | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title         | Structure Reference Drawings | Description and Purpose of Structure                | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-------------------------|------------------------------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C19                        | Bishopton Ditch Culvert | B1033200 /CD/REF/ ST/002     | New structure to carry the A90 over Bishopton Ditch | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title       | Structure Reference Drawings | Description and Purpose of Structure                  | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-----------------------|------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C20                        | Burn of Ardoe Culvert | B1033200 /CD/REF/ ST/002     | New structure to carry the A90 over the Burn of Ardoe | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |



## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                                            | Structure Reference Drawings | Description and Purpose of Structure                                                | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided     |
|----------------------------|------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|----------------------------------------------|
| PS30                       | C34K Hilldowntree - Sunnyside - Causeyport Road Overbridge | B1033200 /CD/REF/ST/001      | New structure to carry C34K Hilldowntree - Sunnyside - Causeyport Road over the A90 | <u>under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road over</u><br>Verge – 2.0m<br>Carriageway – 4.0m<br>Verge – 2.0m<br><br>Headroom – 6.45m | 3                     | LM1 and LM2 loading.                                                           | SV100<br>SV80                                | Vehicle restraint system in accordance with TD19 of the DMRB | General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title         | Structure Reference Drawings | Description and Purpose of Structure              | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-------------------------|------------------------------|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C21                        | Loirston Burn Culvert 1 | B1033200 /CD/REF/ST/002      | New structure to carry the A90 over Loirston Burn | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                                   | Structure Reference Drawings | Description and Purpose of Structure                                             | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                      |
|----------------------------|---------------------------------------------------|------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| PS31                       | C5K Schoolhill to Lochton to Nigg Road Overbridge | B1033200 /CD/REF/ ST/001     | New structure to carry C5K Schoolhill to Lochton to Nigg Road over the A90       | <u>under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road over</u><br>Verge – 2.5m<br>Carriageway – 7.3m<br>Verge – 3.0m<br><br>Headroom – 6.45m | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Vehicle restraint system in accordance with TD19 of the DMRB | BT Openreach - 1x110mm duct in west verge<br><br>General – 2x100mm spare ducts in both verges |
| C22                        | Loirston Burn Culvert 2                           | B1033200 /CD/REF/ ST/002     | New structure to carry C5K Schoolhill to Lochton to Nigg Road over Loirston Burn | <u>Side Road over</u><br>Verge – 2.5m<br>Carriageway – 7.3m<br>Verge – 2.5m<br><br>Headroom – as required by the Design                                                                                                                                                                                                                                 | 3                     | LM1 and LM2 loading.                                                           | SV100<br>SV80                                | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                                                                      |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title         | Structure Reference Drawings | Description and Purpose of Structure                   | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                        | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-------------------------|------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C23                        | Loirston Burn Culvert 3 | B1033200 /CD/REF/ST/002      | New structure to carry the A90 over Loirston Burn      | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Slip Road – 3.65m<br/>Verge - varies<br/>Carriageway – 7.3m<br/>Central reserve – 4.8m</p> <p><u>over Southbound</u></p> <p>Carriageway – 7.3m<br/>Verge – varies<br/>Slip Road – 3.65m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |
| C23A                       | Loirston Burn Culvert 5 | B1033200 /CD/REF/ST/002      | New structure to carry Redmoss Road over Loirston Burn | <p><u>Side Road over</u></p> <p>Verge – 1.0m<br/>Carriageway – 7.3m<br/>Verge – 1.5m</p> <p>Headroom – as required by the Design</p>                                                                                                                                                                                                                 | 3                     | LM1 and LM2 loading.                                                           | SV100<br>SV80                                | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                      | Structure Reference Drawings | Description and Purpose of Structure                          | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                                   |
|----------------------------|--------------------------------------|------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS32                       | A956 Charleston Junction Underbridge | B1033200 /CD/REF/ST/001      | New structure to carry the A956 and A90 over the existing A90 | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 10.8m<br>Hardstrip – 1.0m<br>Central reserve – 1.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 10.8m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road under</u><br>Verge – 2.5m<br>Carriageway – 7.3m<br>Central reserve – 4.2m<br>Carriageway – 7.3m<br>Verge – 4.9m<br><br>Headroom – 5.3m | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | AWPR Communications – 4x100mm ducts in northbound verge<br><br>Lighting – 2x100mm ducts in both verges<br><br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title         | Structure Reference Drawings | Description and Purpose of Structure                               | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                     | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-------------------------|------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C24                        | Loirston Burn Culvert 4 | B1033200 /CD/REF/ ST/002     | New structure to carry the A956 Wellington Road over Loirston Burn | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Slip Road – 3.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV100<br>SV80                                | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                       | Structure Reference Drawings | Description and Purpose of Structure                                    | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                 | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|---------------------------------------|------------------------------|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| PS33                       | North Kingswells Junction Underbridge | B1033200 /CD/REF/ ST/003     | New structure to carry the A90 over North Kingswells Junction Link Road | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road under</u><br>Verge – 4.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – 5.3m | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title         | Structure Reference Drawings | Description and Purpose of Structure                | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-------------------------|------------------------------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C25                        | Kepplehill Burn Culvert | B1033200 /CD/REF/ ST/004     | New structure to carry the A90 over Kepplehill Burn | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |



## Part 2 Specific Requirements

| Structure Reference Number | Structure Title        | Structure Reference Drawings | Description and Purpose of Structure                         | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                            | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided     |
|----------------------------|------------------------|------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|----------------------------------------------|
| PS34                       | Kepplestone Overbridge | B1033200 /CD/REF/ ST/003     | New structure to carry Kepplestone Access Track over the A90 | <p><u>under Northbound</u></p> <p>Verge – 2.5m<br/> Hardstrip – 1.0m<br/> Slip Road – 3.7m<br/> Carriageway – 7.3m<br/> Hardstrip – 1.0m<br/> Central reserve – 2.5m</p> <p><u>under Southbound</u></p> <p>Hardstrip – 1.0m<br/> Carriageway – 7.3m<br/> Slip Road – 3.7m<br/> Hardstrip – 1.0m<br/> Verge – 2.5m</p> <p><u>Side Road over</u></p> <p>Verge – 2.0m<br/> Carriageway – 4.0m<br/> Verge – 2.0m</p> <p>Headroom – 6.45m</p> | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Vehicle restraint system in accordance with TD19 of the DMRB | General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title              | Structure Reference Drawings | Description and Purpose of Structure                  | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                                    | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                                                                                           |
|----------------------------|------------------------------|------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS35                       | U90C Tulloch Road Overbridge | B1033200 /CD/REF/ ST/003     | New structure to carry U90C Tulloch Road over the A90 | <p><u>under Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Slip Road – 3.7m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>under Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Slip Road 3.7m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p><u>Side Road over</u></p> <p>Verge – 3.5m<br/>Hardstrip – 1.8m<br/>Carriageway – 7.3m<br/>Verge – 2.5m</p> <p>Headroom – 6.45m</p> | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Vehicle restraint system in accordance with TD19 of the DMRB | <p>BT Openreach - 1x110mm duct in north verge</p> <p>Cable and Wireless – 1x100mm duct in north verge</p> <p>Scottish Water - 2x200mm ducts in south verge</p> <p>General – 2x100mm spare ducts in both verges</p> |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title      | Structure Reference Drawings | Description and Purpose of Structure           | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                                                   | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|----------------------|------------------------------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C26                        | Gough Burn Culvert 1 | B1033200 /CD/REF/ST/004      | New structure to carry the A90 over Gough Burn | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Slip Road – 3.7m<br/>Verge – varies<br/>Carriageway – 7.3m<br/>Hardstrip –1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Verge – varies<br/>Slip Road – 3.7m<br/>Verge – 2.5m</p> <p><u>Side Road over</u></p> <p>Verge – 0.5m<br/>Carriageway – 3.0m<br/>Verge – 0.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title         | Structure Reference Drawings | Description and Purpose of Structure                                   | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                          | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-------------------------|------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C26A                       | Gough Burn Culvert 2    | B1033200 /CD/REF/ST/004      | New structure to carry Craibstone College Footpath (1) over Gough Burn | <u>Side Road over</u><br>Verge – 0.5m<br>Carriageway – 3.0m<br>Verge – 0.5m<br><br>Headroom – as required by the Design                                                                                                                                                                | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |
| C27                        | Craibstone Burn Culvert | B1033200 /CD/REF/ST/004      | New structure to carry the A90 over Craibstone Burn                    | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

Part 2 Specific Requirements

| Structure Reference Number | Structure Title                 | Structure Reference Drawings | Description and Purpose of Structure                                      | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                           |
|----------------------------|---------------------------------|------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| PS36                       | Craibstone Junction Underbridge | B1033200 /CD/REF/ ST/003     | New structure to carry the A90 over the A96 Craibstone Junction Link Road | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>                     Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Verge – 2.5m</p> <p><u>Side Road under</u></p> <p>Verge – 2.5m<br/>                     Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Central reserve – 2.5m<br/>                     Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Verge – 2.5m</p> <p>Headroom – 5.3m</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | <p>AWPR Communications – 4x100mm ducts in northbound verge</p> <p>General – 2x100mm spare ducts in both verges</p> |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title      | Structure Reference Drawings | Description and Purpose of Structure                         | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|----------------------|------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C28                        | Green Burn Culvert 3 | B1033200 /CD/REF/ ST/004     | New structure to carry the A90 over Green Burn               | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |
| C29                        | Green Burn Culvert 4 | B1033200 /CD/REF/ ST/004     | New structure to carry Craibstone Roundabout over Green Burn | <p><u>Side Road over</u></p> <p>Verge – 4.1m<br/>Carriageway – 13.2m<br/>Verge – 2.5m</p> <p>Headroom – as required by the Design</p>                                                                                                                                                                        | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title      | Structure Reference Drawings | Description and Purpose of Structure                         | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                            | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|----------------------|------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C30                        | Green Burn Culvert 5 | B1033200 /CD/REF/ ST/004     | New structure to carry Craibstone Roundabout over Green Burn | <u>Side Road over</u><br>Verge – 4.5m<br>Carriageway – 13.2m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

Part 2 Specific Requirements

| Structure Reference Number | Structure Title                                           | Structure Reference Drawings | Description and Purpose of Structure        | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                           |
|----------------------------|-----------------------------------------------------------|------------------------------|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| PS37                       | A96 Aberdeen to Inverness Trunk Road Junction Underbridge | B1033200 /CD/REF/ST/003      | New structure to carry the A90 over the A96 | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>                     Hardstrip – 1.0m<br/>                     Slip Road – 3.7m<br/>                     Hardstrip - varies<br/>                     Carriageway – 7.3m<br/>                     Hardstrip –1.0m<br/>                     Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Verge – varies<br/>                     Slip Road – 3.7m<br/>                     Hard shoulder – varies<br/>                     Verge – 2.0m</p> <p><u>over Southbound Slip</u></p> <p>Verge – 2.0m<br/>                     Carriageway – 7.0m<br/>                     Hardstrip – 0.7m<br/>                     Verge – 2.1m</p> <p><u>Side Road under</u></p> <p>Verge – 3.0m<br/>                     Carriageway – 7.0m<br/>                     Central reserve – 5.0m<br/>                     Carriageway – 7.0m<br/>                     Verge – 3.0m</p> <p>Headroom – 5.3m</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | <p>AWPR Communications – 4x100mm ducts in northbound verge</p> <p>General – 2x100mm spare ducts in both verges</p> |



## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                  | Structure Reference Drawings | Description and Purpose of Structure                        | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                    | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                |
|----------------------------|----------------------------------|------------------------------|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| PS38                       | BP Pipeline Protection Structure | B1033200 /CD/REF/ST/003      | New structure to carry the A90 over an existing BP pipeline | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p>Headroom and span – To be agreed with BP</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | H4a containment parapets in accordance with TD19 of the DMRB | <p>AWPR Communications – 4x100mm ducts in northbound verge</p> <p>General – 2x100mm spare ducts in northbound verge</p> |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                             | Structure Reference Drawings | Description and Purpose of Structure                           | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                         | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|---------------------------------------------|------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| PS39                       | Shell Pipeline Protection and NMU Underpass | B1033200 /CD/REF/ST/003      | New structure to carry the A90 over an existing Shell pipeline | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road under</u><br>Verge – 1.5m<br>Carriageway – 3.0m<br>Verge – 0.5m<br><br>Headroom - 2.7m | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | H4a containment parapets in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title              | Structure Reference Drawings | Description and Purpose of Structure         | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                      | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|------------------------------|------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| PS40                       | Kirkhill Wildlife Overbridge | B1033200 /CD/REF/ST/003      | New structure to carry wildlife over the A90 | <u>under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Over</u><br>Verge – 0.6m<br>Landscaped verge – 7.5m<br>Verge – 0.6m<br><br>Headroom – 6.45m | 3                     | None                                                                           | None                                         | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title          | Structure Reference Drawings | Description and Purpose of Structure                                     | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                               | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided   |
|----------------------------|--------------------------|------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|--------------------------------------------|
| PS41                       | Kirkhill Overbridge      | B1033200 /CD/REF/ ST/003     | New structure to carry wildlife and Kirkhill Access Track over the A90   | <u>under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road over</u><br>Verge – 0.6m<br>Carriageway – 4.5m<br>Hard strip – 1.0m<br>Landscaped Verge – 4.5m<br>Hardstrip – 0.6m<br><br>Headroom – 6.45m | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Vehicle restraint system in accordance with TD19 of the DMRB | BT Openreach - 1x110mm duct in north verge |
| C32                        | Bogenjoss Burn Culvert 1 | B1033200 /CD/REF/ ST/004     | New structure to carry Bogenjoss Access Track (West) over Bogenjoss Burn | <u>Side Road over</u><br>Verge – 1.0m<br>Carriageway – 4.0m<br>Verge – 1.0m<br><br>Headroom – as required by the Design                                                                                                                                                                                                                                                                                     | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                   |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title          | Structure Reference Drawings | Description and Purpose of Structure                                     | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|--------------------------|------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C33                        | Bogenjoss Burn Culvert 2 | B1033200 /CD/REF/ST/004      | New structure to carry Bogenjoss Access Track (West) over Bogenjoss Burn | <u>Side Road over</u><br>Verge – 1.0m<br>Carriageway – 3.2m<br>Verge – 1.0m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |
| C34                        | Bogenjoss Burn Culvert 3 | B1033200 /CD/REF/ST/004      | New structure to carry Kirkhill Forest Access Track over Bogenjoss Burn  | <u>Side Road over</u><br>Verge – 1.0m<br>Carriageway – 4.0m<br>Verge – 1.0m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |
| C35                        | Bogenjoss Burn Culvert 4 | B1033200 /CD/REF/ST/004      | New structure to carry Bogenjoss Access Track (West) over Bogenjoss Burn | <u>Side Road Over</u><br><u>Carriageway and Verge –</u><br><u>No less than existing as a minimum</u>                    | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title          | Structure Reference Drawings | Description and Purpose of Structure               | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                          | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|--------------------------|------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C36                        | Bogenjoss Burn Culvert 5 | B1033200 /CD/REF/ST/004      | New structure to carry the A90 over Bogenjoss Burn | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title            | Structure Reference Drawings | Description and Purpose of Structure               | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                           |
|----------------------------|----------------------------|------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| PS41A                      | Bogenjoss Burn Underbridge | B1033200 /CD/REF/ST/003      | New structure to carry the A90 over Bogenjoss Burn | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | <p>AWPR Communications – 4x100mm ducts in northbound verge</p> <p>General – 2x100mm spare ducts in both verges</p> |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                        | Structure Reference Drawings | Description and Purpose of Structure                            | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided     |
|----------------------------|----------------------------------------|------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|----------------------------------------------|
| PS42                       | Pitmedden Farm Access Track Overbridge | B1033200 /CD/REF/ST/003      | New structure to carry Pitmedden Farm Access Track over the A90 | <u>under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road over</u><br>Verge – 2.0m<br>Carriageway – 4.0m<br>Verge – 2.0m<br><br>Headroom – 6.45m | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Vehicle restraint system in accordance with TD19 of the DMRB | General – 2x100mm spare ducts in both verges |



Part 2 Specific Requirements

| Structure Reference Number | Structure Title                              | Structure Reference Drawings | Description and Purpose of Structure                                            | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                     | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                           |
|----------------------------|----------------------------------------------|------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| PS43                       | Shell Pipeline Protection and Farm Underpass | B1033200 /CD/REF/ ST/003     | New structure to carry the A90 over the existing Shell pipeline and farm access | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p><u>Side Road under</u></p> <p>Verge – 1.0m<br/>Carriageway – 4.0m<br/>Verge – 1.0m</p> <p>Headroom - 4.3m</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | H4a containment parapets in accordance with TD19 of the DMRB | <p>AWPR Communications – 4x100mm ducts in northbound verge</p> <p>General – 2x100mm spare ducts in both verges</p> |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                      | Structure Reference Drawings | Description and Purpose of Structure                    | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                         | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                    |
|----------------------------|--------------------------------------|------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| PS44                       | C55C Pitmedden Side Road Underbridge | B1033200 /CD/REF/ST/003      | New structure to carry the A90 over C55C Pitmedden Road | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road under</u><br>Verge – 2.0m<br>Carriageway – 7.3m<br>Verge – 2.0m<br><br>Headroom – 5.3m | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | AWPR Communications – 4x100mm ducts in northbound verge<br><br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                           | Structure Reference Drawings | Description and Purpose of Structure                                       | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                               | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                                            | Service and Service Ducts to be provided                                                                    |
|----------------------------|-------------------------------------------|------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| PS45                       | Aberdeen to Inverness Railway Underbridge | B1033200 /CD/REF/ST/003      | New structure to carry the A90 over the Aberdeen to Inverness Railway line | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – To be agreed with Network Rail | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Reinforced concrete H4a containment parapets in accordance with TD19 of the DMRB | AWPR Communications – 4x100mm ducts in northbound verge<br><br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title    | Structure Reference Drawings | Description and Purpose of Structure              | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                          | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                                                              | Service and Service Ducts to be provided                                                                    |
|----------------------------|--------------------|------------------------------|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| PS46                       | River Don Crossing | B1033200 /CD/REF/ ST/003     | New structure to carry the A90 over the River Don | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – As required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Open steel parapets of post and rail type with H4a containment in accordance with TD19 of the DMRB | AWPR Communications – 4x100mm ducts in northbound verge<br><br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                              | Structure Reference Drawings | Description and Purpose of Structure                           | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                       | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                                  |
|----------------------------|----------------------------------------------|------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS47                       | B977 Echt to Balmedie Road (West) Overbridge | B1033200 /CD/REF/ ST/003     | New structure to carry B977 Echt to Balmedie Road over the A90 | <p><u>under Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>under Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p><u>Side Road over</u></p> <p>Verge – 2.5m<br/>Carriageway – 6.0m<br/>Verge – 2.5m</p> <p>Headroom – 6.45m</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | <p>BT Openreach - 2x110mm ducts in west verge</p> <p>Scottish Water - 2x250mm ducts in west verge</p> <p>General – 2x100mm spare ducts in both verges</p> |
| PS48                       | Goval Burn Underbridge 1 (B977 West)         | B1033200 /CD/REF/ ST/003     | New structure to carry B977 Echt to Balmedie Road over the A90 | <p><u>Side Road over</u></p> <p>Verge – 3.0m<br/>Carriageway – 6.0m<br/>Verge – 2.5m</p> <p>Headroom – As required by the Design</p>                                                                                                                                                                                                                                                | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                                                                                                                                  |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title   | Structure Reference Drawings | Description and Purpose of Structure              | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                        | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-------------------|------------------------------|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| PS49                       | Parkhill Aqueduct | B1033200 /CD/REF/ ST/003     | New structure to carry the Mill Lade over the A90 | <u>under Slip Road</u><br>Verge – 2.0m<br>Hard shoulder – 3.3m<br>Slip Road – 4.4m<br>Verge – 2.5m<br><br><u>under Northbound</u><br>Verge - 2.5m<br>Hardstrip 1.0m<br>Carriageway – 7.3m<br>Hardstrip –1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Aqueduct over</u><br>As required by the Design<br><br>Headroom – 6.45m | 3                     | None                                                                           | None                                         | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                 | Structure Reference Drawings | Description and Purpose of Structure               | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                   |
|----------------------------|---------------------------------|------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| PS50                       | Mill Lade Underbridge (A947)    | B1033200 /CD/REF/ST/003      | New structure to carry the A947 over the Mill Lade | <u>Side Road over</u><br>Verge – 2.5m<br>Carriageway – 7.3m<br>Verge – 2.5m<br><br>Headroom – As required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | Lighting – 2x100mm ducts in west verge<br><br>General – 2x100mm spare ducts in both verges |
| PS51                       | Goval Burn Underbridge 2 (A947) | B1033200 /CD/REF/ST/003      | New structure to carry the A947 over Goval Burn    | <u>Side Road over</u><br>Verge – 2.5m<br>Carriageway – 7.3m<br>Verge – 2.5m<br><br>Headroom – As required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                                                                   |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                                  | Structure Reference Drawings | Description and Purpose of Structure                           | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                         |
|----------------------------|--------------------------------------------------|------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| PS52                       | Formartine and Buchan Way NMU Underpass 1 (A947) | B1033200 /CD/REF/ ST/003     | New structure to carry the A947 over Formartine and Buchan Way | <u>Side Road under</u><br>Footpath – 3.0m<br>Verge – 1.0m<br>Footpath – 3.0m<br><br><u>Side Road over</u><br>Verge – 2.5m<br>Carriageway – 7.3m<br>Slip Road – 3.65m<br>Verge – 2.5m<br><br>Headroom – 4.78m | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | BT<br>Openreach - 4x110mm ducts in east verge<br><br>Lighting – 2x100mm ducts in both verges<br><br>General – 2x100mm spare ducts in both verges |



## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                                         | Structure Reference Drawings | Description and Purpose of Structure         | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                            |
|----------------------------|---------------------------------------------------------|------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| PS53                       | A947 Aberdeen to Old Meldrum to Turriff Road Overbridge | B1033200 /CD/REF/ ST/003     | New structure to carry the A947 over the A90 | <p><u>under Northbound</u></p> <p>Verge – 2.5m<br/> Hard shoulder – 3.3m<br/> Slip Road – 3.7m<br/> Hardstrip – 0.7m<br/> Verge – varies<br/> Hardstrip – 1.0m<br/> Carriageway – 7.3m<br/> Hardstrip – 1.0m<br/> Central reserve – 2.5m</p> <p><u>under Southbound</u></p> <p>Hardstrip – 1.0m<br/> Carriageway – 7.3m<br/> Slip Road – varies<br/> Hardstrip – 1.0m<br/> Verge – 2.5m</p> <p><u>Side Road over</u></p> <p>Verge – 2.5m<br/> Carriageway – 7.3m<br/> Verge – 2.5m</p> <p>Headroom – 6.45m</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | <p>BT Openreach - 4x110mm ducts in east verge</p> <p>Lighting – 2x100mm ducts in east verge</p> <p>General – 2x100mm spare ducts in both verges</p> |

Part 2 Specific Requirements

| Structure Reference Number | Structure Title                | Structure Reference Drawings | Description and Purpose of Structure           | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                           |
|----------------------------|--------------------------------|------------------------------|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| PS54                       | Goval Burn Underbridge 3 (A90) | B1033200 /CD/REF/ ST/003     | New structure to carry the A90 over Goval Burn | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>                     Hardstrip – 1.0m<br/>                     Slip Road – 3.7m<br/>                     Verge - varies<br/>                     Carriageway – 7.3m<br/>                     Hardstrip –1.0m<br/>                     Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Verge – varies<br/>                     Hardstrip – 0.7m<br/>                     Slip Road – 3.7m<br/>                     Hard shoulder -3.3m<br/>                     Verge – 2.0m</p> <p>Headroom – As required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | <p>AWPR Communications – 4x100mm ducts in northbound verge</p> <p>General – 2x100mm spare ducts in both verges</p> |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                                 | Structure Reference Drawings | Description and Purpose of Structure                          | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                                                                                  | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                           |
|----------------------------|-------------------------------------------------|------------------------------|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| PS55                       | Formartine and Buchan Way NMU Underpass 2 (A90) | B1033200 /CD/REF/ST/003      | New structure to carry the A90 over Formartine and Buchan Way | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Slip Road - varies<br/>Carriageway – 7.3m<br/>Hardstrip –1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – varies<br/>Hardstrip – 0.7m<br/>Slip Road – 3.7m<br/>Hard shoulder – 3.3m<br/>Verge – 2.0m</p> <p><u>Side Road under</u></p> <p>Footpath – 3.0m<br/>Verge – 1.0m<br/>Footpath – 3.0m</p> <p>Headroom – 4.78m</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | <p>AWPR Communications – 4x100mm ducts in northbound verge</p> <p>General – 2x100mm spare ducts in both verges</p> |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                            | Structure Reference Drawings | Description and Purpose of Structure                                      | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                     | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                           |
|----------------------------|--------------------------------------------|------------------------------|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| PS56                       | Meadowhead / Waulkmill Road Farm Underpass | B1033200 /CD/REF/ST/003      | New structure to carry the A90 over Meadowhead / Waulkmill Road           | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p><u>Side Road under</u></p> <p>Verge – 2.5m<br/>Carriageway – 6.0m<br/>Verge – 2.5m</p> <p>Headroom – 4.3m</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | <p>AWPR Communications – 4x100mm ducts in northbound verge</p> <p>General – 2x100mm spare ducts in both verges</p> |
| C38                        | Corsehill Burn Culvert 3                   | B1033200 /CD/REF/ST/004      | New structure to carry B977 Echt to Balmedie Road (4) over Corsehill Burn | <p><u>Side Road over</u></p> <p>Verge – 2.5m<br/>Carriageway – 6.5m<br/>Verge – 2.5m</p> <p>Headroom – as required by the Design</p>                                                                                                                                                                                                                                              | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                                                                                           |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title          | Structure Reference Drawings | Description and Purpose of Structure                                        | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|--------------------------|------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C39                        | Corsehill Burn Culvert 2 | B1033200 /CD/REF/ ST/004     | New structure to carry B977 Echt to Balmedie Road (3) over Corsehill Burn   | <u>Side Road over</u><br>Verge – 2.5m<br>Carriageway – 7.3m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |
| C39A                       | Corsehill Burn Culvert 4 | B1033200 /CD/REF/ ST/004     | New structure to Goval East Retention Pond Access Track over Corsehill Burn | <u>Side Road over</u><br>Verge – 1.0m<br>Carriageway – 4.0m<br>Verge – 1.0m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title          | Structure Reference Drawings | Description and Purpose of Structure               | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                                       | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|--------------------------|------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C40                        | Corsehill Burn Culvert 1 | B1033200 /CD/REF/ST/004      | New structure to carry the A90 over Corsehill Burn | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p><u>Side Road over</u></p> <p>Verge – 2.5m<br/>Hardstrip – 0.7m<br/>Carriageway – 3.7m<br/>Hard shoulder – 3.3m<br/>Verge – 2.0m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                              | Structure Reference Drawings | Description and Purpose of Structure                               | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                             |
|----------------------------|----------------------------------------------|------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS57                       | B977 Echt to Balmedie Road (East) Overbridge | B1033200 /CD/REF/ ST/003     | New structure to carry B977 Echt to Balmedie Road (5) over the A90 | <u>under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road over</u><br>Verge – 5.0m<br>Carriageway – 6.5m<br>Verge – 2.5m<br><br>Headroom – 6.45m | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | BT<br>Openreach - 1x110mm duct in west verge<br><br>Scottish Water - 2x250mm ducts in east verge<br><br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                   | Structure Reference Drawings | Description and Purpose of Structure                       | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                         |
|----------------------------|-----------------------------------|------------------------------|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| PS58                       | Lochgreens Access Road Overbridge | B1033200 /CD/REF/ ST/003     | New structure to carry Lochgreens Access Road over the A90 | <u>under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road over</u><br>Verge – 1.0m<br>Carriageway – 4.0m<br>Verge – 1.0m<br><br>Headroom – 6.45m | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Vehicle restraint system in accordance with TD19 of the DMRB | BT<br>Openreach - 1x110mm duct in east verge<br><br>General – 2x100mm spare ducts in both verges |



Part 2 Specific Requirements

| Structure Reference Number | Structure Title       | Structure Reference Drawings | Description and Purpose of Structure              | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                                                   | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-----------------------|------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C41                        | Red Moss Burn Culvert | B1033200 /CD/REF/ ST/004     | New structure to carry the A90 over Red Moss Burn | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>                     Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Verge – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                                         | Structure Reference Drawings | Description and Purpose of Structure                                             | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                              | Service and Service Ducts to be provided                                                         |
|----------------------------|---------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| PS59                       | U19C Leuchlands to Cranbog to Sheilhill Road Overbridge | B1033200 /CD/REF/ST/003      | New structure to carry U19C Leuchlands to Cranbog to Sheilhill Road over the A90 | <u>under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road over</u><br>Verge – 2.5m<br>Carriageway – 6.0m<br>Verge – 2.5m<br><br>Headroom – 6.45m | 3                     | LM1 and LM2 loading.                                                           | SV80                                         | Pedestrian headwall protection in accordance with TD19 of the DMRB | BT<br>Openreach - 1x110mm duct in east verge<br><br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                         | Structure Reference Drawings | Description and Purpose of Structure                             | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                         |
|----------------------------|-----------------------------------------|------------------------------|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| PS60                       | B999 Aberdeen to Tarves Road Overbridge | B1033200 /CD/REF/ST/003      | New structure to carry B999 Aberdeen to Tarves Road over the A90 | <u>under Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road over</u><br>Verge – 2.5m<br>Carriageway – 7.3m<br>Verge – 2.5m<br><br>Headroom – 6.45m | 3                     | LM1 and LM2 loading.                                                           | SV100<br>SV80                                | Vehicle restraint system in accordance with TD19 of the DMRB | BT<br>Openreach - 1x110mm duct in east verge<br><br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title         | Structure Reference Drawings | Description and Purpose of Structure              | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                          | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-------------------------|------------------------------|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C42                        | Blackdog Burn Culvert 1 | B1033200 /CD/REF/ ST/004     | New structure to carry the A90 over Blackdog Burn | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title        | Structure Reference Drawings | Description and Purpose of Structure               | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                          | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|------------------------|------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C43                        | Blackdog Ditch Culvert | B1033200 /CD/REF/ST/004      | New structure to carry the A90 over Blackdog Ditch | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

Part 2 Specific Requirements

| Structure Reference Number | Structure Title                       | Structure Reference Drawings | Description and Purpose of Structure                 | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                              | Service and Service Ducts to be provided                                                                                                                                                                             |
|----------------------------|---------------------------------------|------------------------------|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS61                       | Blackdog Junction Underbridge (North) | B1033200 /CD/REF/ ST/003     | New structure to carry the A90 over the existing A90 | <p><u>under Northbound</u></p> <p>Verge – 2.5m<br/>                     Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Central reserve – varies</p> <p><u>under Southbound</u></p> <p>Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Verge – 2.5m</p> <p><u>Side Road over</u></p> <p>Verge – 2.0m<br/>                     Carriageway – 12.0m<br/>                     Verge – 4.0m</p> <p>Headroom – 5.3m</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Pedestrian headwall protection in accordance with TD19 of the DMRB | <p>BT Openreach - 3x110mm ducts in south verge</p> <p>AWPR Communications – 4x100mm ducts in northbound verge</p> <p>Lighting – 2x100mm ducts in south verge</p> <p>General – 2x100mm spare ducts in both verges</p> |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                       | Structure Reference Drawings | Description and Purpose of Structure                                              | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                                                                                         |
|----------------------------|---------------------------------------|------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS62                       | Blackdog Junction Underbridge (South) | B1033200 /CD/REF/ST/003      | New structure to carry the A90 over the existing A90                              | <u>under Northbound</u><br>Verge – 4.0m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>under Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 5.0m<br><br><u>Side Road over</u><br>Verge – 2.0m<br>Carriageway – 12.0m<br>Verge – 4.0m<br><br>Headroom – 5.3m | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | BT<br>Openreach - 3x110mm ducts in north verge<br><br>AWPR Communications – 4x100mm ducts in northbound verge<br><br>Lighting – 2x100mm ducts in north verge<br><br>General – 2x100mm spare ducts in both verges |
| C44                        | Middlefield Burn Culvert 1            | B1033200 /CD/REF/ST/004      | New structure to carry Belhavia to Wateridgemuir Road (C1C) over Middlefield Burn | <u>Side Road over</u><br>Verge – 2.5m<br>Carriageway – 7.3m<br>Verge – 2.5m<br><br>Headroom – as required by the Design                                                                                                                                                                                                                                 | 3                     | LM1 and LM2 loading.                                                           | SV100<br>SV80                                | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                                                                                                                                                                                         |

Part 2 Specific Requirements

| Structure Reference Number | Structure Title            | Structure Reference Drawings | Description and Purpose of Structure                 | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|----------------------------|------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C45                        | Middlefield Burn Culvert 2 | B1033200 /CD/REF/ST/004      | New structure to carry the A90 over Middlefield Burn | <p><u>Slip Road over</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip –1.0m<br/>Central reserve – 2.5m</p> <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip –1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p><u>Slip Road over</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip –1.0m<br/>Central reserve – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |



## Part 2 Specific Requirements

| Structure Reference Number | Structure Title            | Structure Reference Drawings | Description and Purpose of Structure                                             | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|----------------------------|------------------------------|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C46                        | Middlefield Burn Culvert 3 | B1033200 /CD/REF/ST/004      | New structure to carry Western Hatton Cottages Access Road over Middlefield Burn | <u>Side Road over</u><br>Verge – 2.5m<br>Carriageway – 7.3m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV100<br>SV80                                | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |
| C47                        | Blackdog Burn Culvert 3    | B1033200 /CD/REF/ST/004      | New structure to carry Tarberthill Landfill Access Road over Blackdog Burn       | <u>Side Road over</u><br>Verge – 2.0m<br>Carriageway – 6.0m<br>Verge – 2.0m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV100<br>SV80                                | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                          | Structure Reference Drawings | Description and Purpose of Structure                                                                                | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C48                        | Culvert C48 - Tributary of Milden Burn   | P246600/STRU/2/17000         | New structure to carry the A90 Mainline and Milden access over the Milden Burn                                      | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip –1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p>Milden Access</p> <p>Verge - 2.0m<br/>Carriageway – 7.3m<br/>Verge - 2.0m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |
| C48A                       | Culvert 48A – Existing culvert extension | P246600/STRU/2/17000         | Extension of existing culvert to accommodate proposed northbound merge lane of grade separated junction at Balmedie | <p><u>over Northbound Merge</u></p> <p>Verge – 2.0m<br/>Hardstrip – 3.3m<br/>Carriageway – 3.7m<br/>Hardstrip –0.7m</p>                                                                                                                                                                                                                                                                      | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                        | Structure Reference Drawings | Description and Purpose of Structure                                                  | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                          | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|----------------------------------------|------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C49                        | Culvert C49 - Tributary of Milden Burn | P246600/STRU/2/17000         | New structure to carry the Southbound link of the Balmeddie Junction over Milden Burn | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

Part 2 Specific Requirements

| Structure Reference Number | Structure Title               | Structure Reference Drawings | Description and Purpose of Structure                     | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                                                                                                                                                        |
|----------------------------|-------------------------------|------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS63                       | Balmedie Junction Underbridge | P246600/STRU/2/17000         | New structure to carry the A90 over the B977 Realignment | <p><u>Northbound Diverge</u></p> <p>Varies</p> <p><u>A90 Mainline</u></p> <p>Verge – 2.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Central Reserve – 2.5m<br/>                     Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Verge – 2.5m</p> <p><u>Southbound Diverge</u></p> <p>Varies</p> <p><u>Side Road under</u></p> <p>Verge – 2.5m<br/>                     Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Verge – 2.5m</p> <p>Headroom – 5.3m</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | <p>A90 Mainline</p> <p>B to T Communications – 4x100mm ducts in southbound verge</p> <p>Cable &amp; Wireless – 1x90mm duct in northbound verge</p> <p>Side Road Under</p> <p>BT Openreach - 1x110mm duct in south verge</p> <p>General – 2x100mm spare ducts in both verges</p> |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title          | Structure Reference Drawings | Description and Purpose of Structure                                 | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                              | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                               |
|----------------------------|--------------------------|------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------|
| PS64                       | Kier Farm Underpass      | P246600/STRU/2/17000         | New structure to carry the B977 Realignment over a farm access track | <u>B977 Realignment over</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Farm Access Track Under</u><br><br><u>Clear span 4.0m</u><br><br><u>Headroom 2.3m</u> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | A90 Mainline<br><br>BT<br>Openreach - 1x110mm duct in northbound verge |
| C50                        | Culvert C50 - Eigie Burn | P246600/STRU/2/17000         | New structure to carry the B977 realignment over Eigie Burn          | <u>B977 Realignment over</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – as required by the Design                                                     | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                                               |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                       | Structure Reference Drawings | Description and Purpose of Structure                        | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                          | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|---------------------------------------|------------------------------|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C51                        | Culvert C51 - Eigie Burn              | P246600/STRU/2/17000         | New structure to carry the B977 realignment over Eigie Burn | <u>B977 Realignment over</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |
| C52                        | Culvert C52 – Tributary of Eigie Burn | P246600/STRU/2/17000         | New structure to carry the realigned B977 footway.          | <u>B977 Realignment footway over</u><br>Verge – 0.5m<br>Footway – 3.0m<br>Verge – 0.5m<br><br>Headroom – as required by the Design                                     | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title            | Structure Reference Drawings | Description and Purpose of Structure    | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                          | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|----------------------------|------------------------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C53                        | Culvert C53 – Unnamed Burn | P246600/STRU/2/17000         | New structure to carry the unnamed burn | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title             | Structure Reference Drawings | Description and Purpose of Structure                   | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                            | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                              |
|----------------------------|-----------------------------|------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS65                       | South Orrock Farm Underpass | P246600/STRU/2/17000         | New structure to carry the A90 over a farm access road | <u>A90 Mainline</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central Reserve – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Access Road under</u><br>Verge – 2.0m<br>Carriageway – 5.5m<br><br>Verge – 2.0m <u>Headroom 5.3m</u> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | A90 Mainline<br>B to T Communications – 4x100mm ducts in northbound verge<br><br>Access Road under<br><br>BT Openreach - 1x110mm ducts in north verge |



## Part 2 Specific Requirements

| Structure Reference Number | Structure Title            | Structure Reference Drawings | Description and Purpose of Structure     | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                          | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|----------------------------|------------------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C54                        | Culvert 54 – Blairton Burn | P246600/STRU/2/17000         | New structure to carry the Blairton burn | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title        | Structure Reference Drawings | Description and Purpose of Structure                               | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                        | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                                                                                      |
|----------------------------|------------------------|------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS66                       | Orrock Road Overbridge | P246600/STRU/2/17000         | New structure to carry a single carriageway side road over the A90 | <u>A90 Mainline under</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central Reserve – Min. 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road over</u><br>Verge – 2.9m<br>Carriageway – 5.5m<br>Verge – 2.9m<br><br><u>Headroom 6.45m</u> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | A90 Mainline<br><br>B to T Communications – 4x100mm ducts in northbound verge<br><br>Side Road over<br><br>BT<br>Openreach - 1x110mm ducts in north verge<br><br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                       | Structure Reference Drawings | Description and Purpose of Structure                                 | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                          | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|---------------------------------------|------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C55                        | Culvert C55 – Tributary of Menie Burn | P246600/STRU/2/17000         | New structure to carry the Mainline over the Tributary of Menie Burn | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title  | Structure Reference Drawings | Description and Purpose of Structure                   | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                     | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                                                                                                                             |
|----------------------------|------------------|------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS67                       | Dabrae Underpass | P246600/STRU/2/17000         | New structure to carry the A90 over a farm access road | <u>A90 Mainline over</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central Reserve – Min. 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Access Road under</u><br>North verge – 1.0m<br>Carriageway – 5.5m<br>South verge – 3.0m<br><br><u>Headroom 5.3m</u> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | A90 Mainline<br>B to T Communications – 4x100mm ducts in northbound verge<br>Access Road<br>BT Openreach - 1x110mm ducts in south verge<br>Scottish Water – 1x250mm distribution main in south verge<br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                       | Structure Reference Drawings | Description and Purpose of Structure                                 | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|---------------------------------------|------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C56                        | Culvert C56 – Tributary of Menie Burn | P246600/STRU/2/17000         | New structure to carry the Mainline over the Tributary of Menie Burn | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>Carriageway – 7.3m<br/>Hardstrip – 1.0m<br/>Verge – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |
| C57                        | Culvert C57 - Tributary of Menie Burn | P246600/STRU/2/17000         | New structure to carry the Mainline over the Tributary of Menie Burn | Headroom – as required by the Design                                                                                                                                                                                                                                                                         | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                       | Structure Reference Drawings | Description and Purpose of Structure                                 | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                          | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|---------------------------------------|------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C58                        | Culvert C58 - Tributary of Menie Burn | P246600/STRU/2/17000         | New structure to carry the Mainline over the Tributary of Menie Burn | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

Part 2 Specific Requirements

| Structure Reference Number | Structure Title            | Structure Reference Drawings | Description and Purpose of Structure                  | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                                                   | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|----------------------------|------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C59                        | Culvert C59 - Sandend Burn | P246600/STRU/2/17000         | New structure to carry the Mainline over Sandend Burn | <p><u>over Northbound</u></p> <p>Verge – 2.5m<br/>                     Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Central reserve – 2.5m</p> <p><u>over Southbound</u></p> <p>Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Verge – 2.5m</p> <p>Headroom – as required by the Design</p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title            | Structure Reference Drawings | Description and Purpose of Structure                    | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                            | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                  |
|----------------------------|----------------------------|------------------------------|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------|
| PS68                       | Aitkenshill Farm Underpass | P246600/STRU/2/17000         | New structure to carry the A90 over a farm access track | <u>Northbound Diverge</u><br><u>Varies</u><br><br><u>A90 Mainline over</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip –1.0m<br>Central Reserve – Min. 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Southbound Merge</u><br><u>Varies</u><br><br><u>Access Track under</u><br>Clear Span 6.0m<br><u>Minimum Headroom 4.3m</u> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | B to T Communications – 4x100mm ducts in northbound verge |



## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                         | Structure Reference Drawings | Description and Purpose of Structure                                   | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                          | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-----------------------------------------|------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C60                        | Culvert C60 - Tributary of Sandend Burn | P246600/STRU/2/17000         | New structure to carry the Mainline over the Tributary of Sandend Burn | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

Part 2 Specific Requirements

| Structure Reference Number | Structure Title                    | Structure Reference Drawings | Description and Purpose of Structure                     | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                                                                                                                                              |
|----------------------------|------------------------------------|------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS69                       | Newburgh Road Junction Underbridge | P246600/STRU/2/17000         | New structure to carry the A90 over the A975 Realignment | <p><u>A90 Mainline over</u></p> <p>Verge – 2.5m<br/>                     Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Central Reserve – Min. 2.5m<br/>                     Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Verge – 2.5m</p> <p><u>Realigned A975 under</u></p> <p>Verge – 2.0m Minimum<br/>                     Hardstrip – 1.0m<br/>                     Carriageway – 7.3m<br/>                     Hardstrip – 1.0m<br/>                     Verge – 2.0m Minimum</p> <p><u>Headroom 5.3m</u></p> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | <p>A90 Mainline</p> <p>B to T Communications – 4x100mm ducts in southbound verge</p> <p>General – 2x100mm spare ducts in both verges</p> <p>Realigned A975</p> <p>BT Openreach - 4x110mm ducts in north verge</p> <p>General – 2x100mm spare ducts in both verges</p> |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title          | Structure Reference Drawings | Description and Purpose of Structure                 | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                            | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                  |
|----------------------------|--------------------------|------------------------------|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------|
| PS69A                      | Foveran Burn Underbridge | P246600/STRU/2/17000         | New structure to carry the A90 over the Foveran Burn | <u>A90 Mainline over</u><br>Verge – 2.5m minimum<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central Reserve – Min. 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m minimum<br><br><u>Foveran Burn under</u><br><br>Span - as required by the Design<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | B to T Communications – 4x100mm ducts in southbound verge |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title         | Structure Reference Drawings | Description and Purpose of Structure                               | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                        | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                                                              |
|----------------------------|-------------------------|------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS70                       | Foveran Road Overbridge | P246600/STRU/2/17000         | New structure to carry a single carriageway side road over the A90 | <u>A90 Mainline under</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central Reserve – Min. 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road over</u><br>Verge – 2.0m<br>Carriageway – 5.5m<br>Verge – 2.0m<br><br><u>Headroom 6.45m</u> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | A90 Mainline<br>B to T Communications – 4x100mm ducts in southbound verge<br>Side Road<br>BT Openreach - 1x110mm ducts in north verge<br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                         | Structure Reference Drawings | Description and Purpose of Structure                  | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                          | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-----------------------------------------|------------------------------|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C61                        | Culvert C61 - Tributary of Foveran Burn | P246600/STRU/2/17000         | New structure to carry the Mainline over Foveran Burn | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title           | Structure Reference Drawings | Description and Purpose of Structure                               | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                        | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                            |
|----------------------------|---------------------------|------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| PS71                       | Pitmillan Road Overbridge | P246600/STRU/2/17000         | New structure to carry a single carriageway side road over the A90 | <u>A90 Mainline under</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central Reserve – Min. 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br><u>Side Road over</u><br>Verge – 2.0m<br>Carriageway – 5.5m<br>Verge – 2.0m<br><br><u>Headroom 6.45m</u> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | A90 Mainline<br>B to T Communications – 4x100mm ducts in southbound verge<br><br>Side Road over<br><br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                 | Structure Reference Drawings | Description and Purpose of Structure                      | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                          | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|---------------------------------|------------------------------|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C62                        | Culvert C62 - Minor Watercourse | P246600/STRU/2/17000         | New structure to carry the Mainline over Drainage Ditches | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                         | Structure Reference Drawings | Description and Purpose of Structure                                   | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                          | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided |
|----------------------------|-----------------------------------------|------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------|
| C63                        | Culvert C63 - Tributary of Foveran Burn | P246600/STRU/2/17000         | New structure to carry the Mainline over the Tributary of Foveran Burn | <u>over Northbound</u><br>Verge – 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central reserve – 2.5m<br><br><u>over Southbound</u><br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m<br><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                 |



## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                    | Structure Reference Drawings | Description and Purpose of Structure                      | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                                                                                                                     | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                                                                                                                                         |
|----------------------------|------------------------------------|------------------------------|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS72                       | Tipperty Road Junction Underbridge | P246600/STRU/2/17000         | New structure to carry the A90 over the B9000 Realignment | <u>A90 Mainline over</u><br>Verge – 2.5m minimum<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central Reserve – Min. 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m minimum<br><br><u>Realigned B9000 under</u><br>Verge – 2.5m Minimum<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m Minimum<br><br><u>Headroom 5.3m</u> | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | A90 Mainline over<br><br>B to T Communications – 4x100mm ducts in southbound verge<br><br>General – 2x100mm spare ducts in both verges<br><br>B9000 under<br><br>BT Openreach - 1x110mm ducts in north verge<br><br>General – 2x100mm spare ducts in both verges |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                      | Structure Reference Drawings | Description and Purpose of Structure                                    | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                                                                                                                  | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2) | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                                                     | Service and Service Ducts to be provided |
|----------------------------|--------------------------------------|------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------|
| PS73                       | Shell Pipeline Crossing Mainline     | P246600/STRU/2/17000         | New structure to carry the A90 over the existing Shell pipeline         | <u>A90 Mainline over</u><br>Verge – 2.5m minimum<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Central Reserve – Min. 2.5m<br>Hardstrip – 1.0m<br>Carriageway – 7.3m<br>Hardstrip – 1.0m<br>Verge – 2.5m minimum<br><br><u>Shell Pipeline under</u><br>Headroom – as required by the Design | 3                     | LM1 and LM2 loading.                                                           | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB and requirements of Shell UK | No specific requirements                 |
| PS74                       | Shell Pipeline Crossing Access Track | P246600/STRU/2/17000         | New structure to carry an access track over the existing Shell pipeline | <u>Access Track</u><br>Verge – 1.5m<br>Access Track – 3.5m<br>Verge – 1.5m<br><br><u>Shell Pipeline under</u><br>Headroom – as required by the Design                                                                                                                                                          | 3                     | LM1 and LM2 loading.                                                           |                                              | Vehicle restraint system in accordance with TD19 of the DMRB and requirements of Shell UK | No specific requirements                 |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title                        | Structure Reference Drawings | Description and Purpose of Structure                                          | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2)                                | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                             |
|----------------------------|----------------------------------------|------------------------------|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| PS75                       | BP Pipeline Crossing – Bridgend Access | P246600/STRU/2/17000         | New structure to carry the Bridgend Access Road over the existing BP Pipeline | <u>Bridgend Access over</u><br>Verge – 2.0m minimum<br>Carriageway – 5.5m<br>Verge – 2.0m minimum<br><u>BP Pipeline under</u><br>Headroom – 1.8m minimum                                                     | 3                     | LM1 and LM2 loading.                                                                                          | SV196<br>SV100<br>SV80                       | Vehicle restraint system in accordance with TD19 of the DMRB | No specific requirements                                                                                                                             |
| ES1                        | Millden Burn / Creep                   | P246600/STRU/2/17000         | Existing 2-level Box Culvert to be maintained                                 | D2AP: 7.3m Carriageway; 2* 1m hard strips; 2* 2.5m verges; 2.5m central reserve.<br><br>Structure Size (clear dimensions)<br>3.25m wide x 3.025m high(av) for creep<br><br>& 3.25m wide x1.95m high for burn | 3                     | ALL capacity of 40 tonnes in accordance with BD 21/01 and HB capacity of 45 units in accordance with BD37/01. | See Note 2                                   | Vehicle restraint system in accordance with TD19 of the DMRB | Existing Apparatus to be retained unless proposed otherwise by the Apparatus owner.<br><br>B to T Communications – 4x100mm ducts in southbound verge |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title     | Structure Reference Drawings | Description and Purpose of Structure | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                        | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2)                                | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                             |
|----------------------------|---------------------|------------------------------|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| ES2                        | Keir Farm Underpass | P246600/STRU/2/17000         | Existing underpass to be maintained  | D2AP: 7.3m Carriageway; 2* 1m hard strips; 2* 2.5m verges; 2.5m central reserve.<br><br>Underpass Size<br>4.5m x 5.8m, 5.3m headroom | 3                     | ALL capacity of 40 tonnes in accordance with BD 21/01 and HB capacity of 45 units in accordance with BD37/01. | See Note 2                                   | Vehicle restraint system in accordance with TD19 of the DMRB | Existing Apparatus to be retained unless proposed otherwise by the Apparatus owner.<br><br>B to T Communications – 4x100mm ducts in southbound verge |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title               | Structure Reference Drawings | Description and Purpose of Structure                  | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                  | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2)                                | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                             |
|----------------------------|-------------------------------|------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| ES3                        | BP Forties Pipeline Structure | P246600/STRU/2/17000         | Existing portal protection structure to be maintained | D2AP: 7.3m Carriageway; 2* 1m hard strips; 2* 2.5m verges; 2.5m central reserve.<br><br>Structure Size<br>4000mm (clear) width | 3                     | ALL capacity of 40 tonnes in accordance with BD 21/01 and HB capacity of 45 units in accordance with BD37/01. | See Note 2                                   | Vehicle restraint system in accordance with TD19 of the DMRB | Existing Apparatus to be retained unless proposed otherwise by the Apparatus owner.<br><br>B to T Communications – 4x100mm ducts in southbound verge |

## Part 2 Specific Requirements

| Structure Reference Number | Structure Title       | Structure Reference Drawings | Description and Purpose of Structure           | Minimum Cross-sectional / Internal Dimensions<br>(See Note 1)                                                                                                                                                 | Design Check Category | Required Live Loading (excluding LM3 Special Vehicles) (Eurocode BS EN 1991-2)                                | LM3 Special Vehicles (Eurocode BS EN 1991-2) | Vehicle Parapet Type (where required)                        | Service and Service Ducts to be provided                                                                                                             |
|----------------------------|-----------------------|------------------------------|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| ES4                        | Tipperty Burn / Creep | P246600/STRU/2/17000         | Existing 2- level Box Culvert to be maintained | D2AP: 7.3m Carriageway; 2* 1m hard strips; 2* 2.5m verges; 2.5m central reserve.<br><br>Structure Size (clear dimensions)<br><br>4.8m wide x 3.048m high for creep<br><br>& 4.674m wide x1.600m high for burn | 3                     | ALL capacity of 40 tonnes in accordance with BD 21/01 and HB capacity of 45 units in accordance with BD37/01. | See Note 2                                   | Vehicle restraint system in accordance with TD19 of the DMRB | Existing Apparatus to be retained unless proposed otherwise by the Apparatus owner.<br><br>B to T Communications – 4x100mm ducts in southbound verge |

Note 1 - The minimum dimensions stated may need to be increased to accommodate sightline widening where required.

Note 2 - To be assessed in accordance with Section 2.16 of this Part 2.

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**APPENDIX I - NOT USED**

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**APPENDIX J - PROCEDURE FOR STRUCTURES ASSESSMENT**

**THIS IS APPENDIX J TO PART 2 OF THE NEW WORKS REQUIREMENTS**

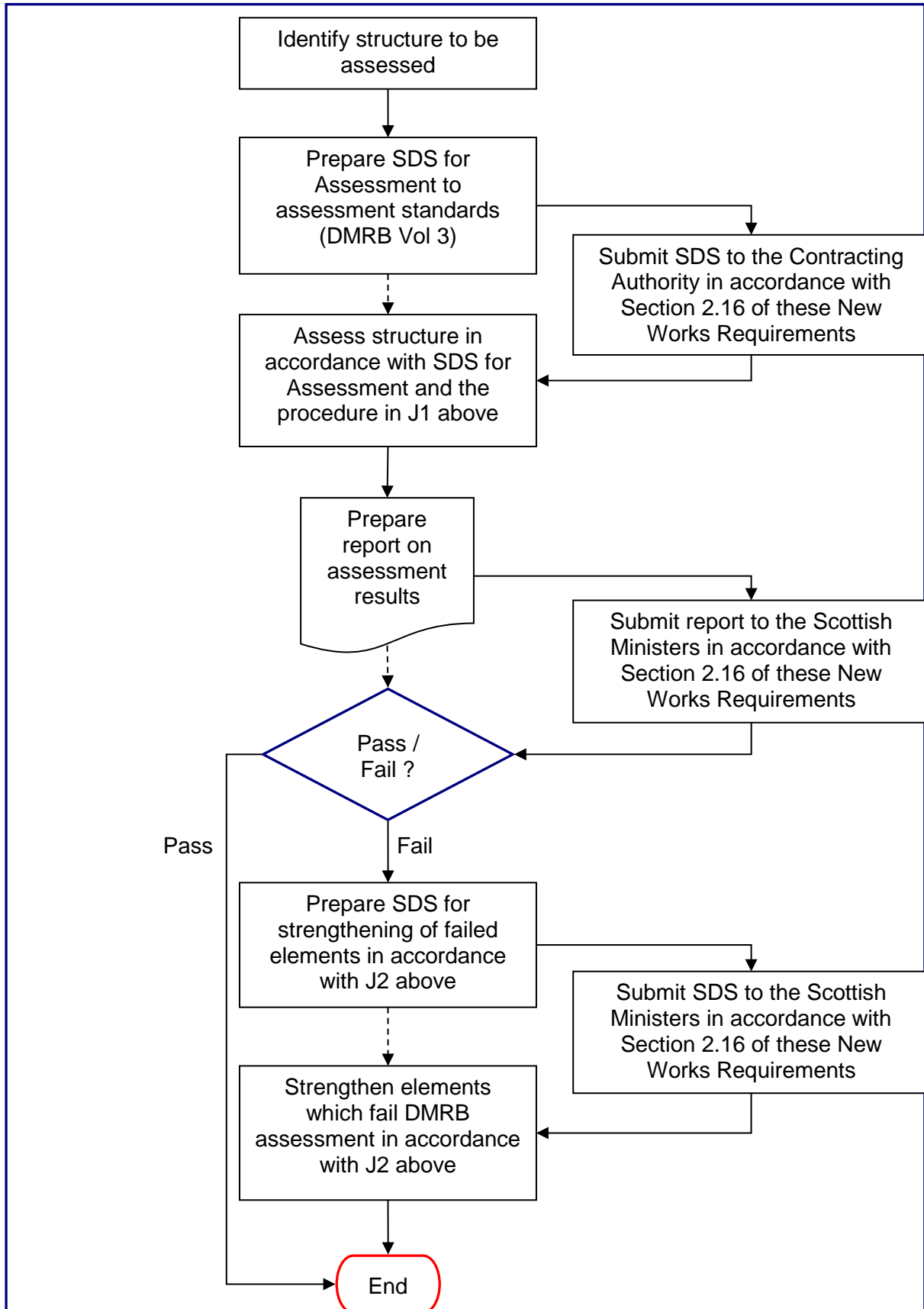
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## APPENDIX J

### PROCEDURE FOR STRUCTURES ASSESSMENT

The Contracting Authority do not warrant the accuracy of any assessment reports of existing Structures.

- J1** The assessment of an existing Structure which is to be widened or otherwise modified and incorporated in the Works, shall be carried out in accordance with the flowchart below and the following procedure:
- (a) analyse the existing Structure to determine the load effects (moments, shears etc), the loading being in accordance with current assessment standards;
  - (b) analyse the Structure to determine the load effects (moments, shears etc) following widening or modification, the loading on the whole Structure being in accordance with current assessment standards;
  - (c) analyse the Structure to determine the load effects (moments, shears etc) following widening or modification, the loading on the whole Structure being in accordance with current Eurocode design standards;
  - (d) in relation to that part of the existing Structure to be retained and incorporated in the modified / widened Structure, provided the load effects determined in (b) above are no more adverse than those determined in (a) above, no strengthening need be carried out on the part of the existing Structure to be retained; and
  - (e) in relation to that part of the existing Structure to be retained and incorporated in the modified / widened Structure, where the load effects determined in (b) above are more adverse than those determined in (a) above, the part of the existing Structure to be retained and in which the load effects have become more adverse due to the proposed widening / modification shall be strengthened to carry the load effects determined in (c) above. Those parts of the existing Structure in which the load effects have not increased need not be strengthened.
- J2** All new works to existing Structures which are to be widened or otherwise modified shall be designed to accommodate the load effects determined in accordance with current Eurocode design standards.



Flowchart for the assessment /strengthening of existing structure

**APPENDIX K1 - STRUCTURES DESIGN STATEMENT  
(NEW WORKS)**

**THIS IS APPENDIX K1 TO THE NEW WORKS REQUIREMENTS**

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## Part 2 Specific Requirements

**1 ROAD DETAILS****1.1** Type of road**1.2** Permitted traffic speed <sup>2</sup>**1.3** Existing restrictions <sup>3</sup>**2 SITE DETAILS****2.1** Obstacle crossed**3 PROPOSED STRUCTURE****3.1** Description of Structure and design working life <sup>4</sup>**3.2** Structural type**3.3** Foundation type (including any special measures or associated works such as ground treatment or mine workings consolidation to take account of any problems identified in Section 6 below)**3.4** Span arrangements**3.5** Articulation arrangements**3.6** Classes and levels <sup>5</sup>**3.6.1** Consequence class**3.6.2** Reliability class



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3.6.3 Inspection level

**3.7** Road restraint systems requirements

**3.8** Proposed arrangements for future maintenance and inspection

3.8.1 Traffic management

3.8.2 Arrangements for future maintenance and inspection of structure.  
Access arrangements to structure.

**3.9** Environment and sustainability

**3.10** Durability. Materials and finishes <sup>6</sup>

**3.11** Risks and hazards considered for design, execution, maintenance and demolition  
Consultation with and / or agreement from CDM co-ordinator <sup>7</sup>

**3.12** Proposed arrangements for execution

3.12.1 Construction of Structure

3.12.2 Traffic management

3.12.3 Service diversion

3.12.4 Interface with existing Structures

Part 2 Specific Requirements

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**4 DESIGN CRITERIA**

**4.1 Actions**

4.1.1 Permanent actions

4.1.2 Snow, Wind and Thermal actions

4.1.3 Actions relating to normal traffic under AW regulations and C&U regulations<sup>8</sup>

4.1.4 Actions relating to General Order traffic under STGO regulations<sup>9</sup>

4.1.5 Footway or footbridge variable actions

4.1.6 Actions relating to Special Order traffic, provision for exceptional abnormal indivisible loads including location of vehicle track on deck cross-section<sup>10</sup>

4.1.7 Accidental actions

4.1.8 Actions during execution

4.1.9 Any special actions not covered above<sup>11</sup>

**4.2 Heavy or high load route requirements and arrangements being made to preserve the route, including any provisions for future heavier loads or future widening<sup>12</sup>**

**4.3 Minimum headroom provided**

**4.4 Authorities consulted and any special conditions required**

## Part 2 Specific Requirements

**4.5** Standards and documents listed in the Technical Approval Schedule

Refer to Annex A

**4.6** Proposed Departures from standards given in 4.5**4.7** Proposed Departures relating to methods for dealing with aspects not covered by standards in 4.5**4.8** List of record of options and choices (for Category 2 and 3 checks) <sup>13</sup>**5 STRUCTURAL ANALYSIS****5.1** Methods of analysis proposed for superstructure, substructure and foundations <sup>14</sup>**5.2** Description and diagram of idealised Structure to be used for analysis**5.3** Assumptions intended for calculation of structural element stiffness**5.4** Proposed range of soil parameters to be used in the design of earth retaining elements <sup>15</sup>**6 GEOTECHNICAL CONDITIONS****6.1** Geotechnical Category of Structure (BS EN 1997-1)**6.2** Acceptance of recommendations of the Geotechnical Design Report to be used in the design and reasons for any proposed changes**6.3** Summary of design for highway Structure in the Geotechnical Design Report

Part 2 Specific Requirements

**6.4** Differential settlement to be allowed for in the design of the Structure (including reference to settlements at interface between Structure and earthworks)

**6.5** If the Geotechnical Design Report is not yet available, state when the results are expected and list the sources of information used to justify the preliminary choice of foundations <sup>16</sup>

**6.6** Tolerances for reinforced soil Structures (face angle >70 degrees) (including methodology for measurement)

**7 CHECKING**

**7.1** Proposed Category and Design Supervision Level

Category 3. Design Supervision Level DSL3

**7.2** Name of proposed Category 3 Checker

**8 DRAWINGS AND DOCUMENTS**

**8.1** List of drawings (including numbers) and documents accompanying the submission <sup>17</sup>

- ANNEX A - Technical Standards Schedule <sup>18</sup>
- ANNEX B - Diagram of idealised structural analysis model
- ANNEX C - Departures from Standards
- ANNEX D - Drawings
- ANNEX E - Choices and Options – Information to be Provided <sup>13</sup>

**9 THE ABOVE ACCURATELY REFLECTS THE ASSUMPTIONS USED FOR DESIGN OF THIS STRUCTURE**

Signed \_\_\_\_\_

Name \_\_\_\_\_

Design Team Leader

Engineering Qualifications \_\_\_\_\_ <sup>19</sup>

Name of Organisation \_\_\_\_\_

Date

## Part 2 Specific Requirements

**Notes**

- 1 Delete as appropriate.
- 2 For a bridge, give over and / or under.
- 3 Include weight, height, width and any environmental restrictions at or adjacent to the bridge.
- 4 The design working life of the structure, including temporary structure, and replaceable structural parts shall be given. They shall be expressed as a number of years rather than a range of years. A design working life shall be based on the DMRB if stated. Otherwise it may be based on the guidance given in the Overseeing Organisation's current requirements for the use of Eurocodes for the design of highway structures.
- 5 State the classes and levels for the whole structure, as well as those for the individual main structural elements if higher or lower. See the Overseeing Organisation's current requirements for the use of Eurocodes for the design of highway structures. Refer to BS EN 1990:2002 + A1:2005 cl. B3, B4 and B5 for further information.
- 6 For concrete Structures, give applicable exposure classes for particular structural elements as stated in TS IA 23. For all material strengths given, list the relevant codes / standards..
- 7 List only risks and hazards that would not be apparent to an experienced and competent Contractor or are likely to require special attention to manage them effectively. Where possible and practicable, the identified potential risks and hazards shall be eliminated or minimised during the design stage. Designers shall name the CDM co-ordinator and confirm that the CDM co-ordinator has reviewed the risks and hazards identified in the AIP and is satisfied.
- 8 e.g. Load Models 1 or 2, BS EN 1991-2.
- 9 e.g. SV model vehicle in Load Model 3, BS EN 1991-2.
- 10 e.g. SOV model vehicle in Load Model 3, BS EN 1991-2 and / or individual vehicle which includes the following information as applicable.
  - a) Gross weight of the vehicle in tonnes and vehicle type and number;
  - b) Axle load and spacing (longitudinally and transversely);
  - c) Air cushion in tonnes over area applied in m x m; and
  - d) Single or twin tyres and wheel contact areas.
- 11 e.g. seismic action, atmospheric icing, floating debris etc.
- 12 The heavy or high load route requirements should be confirmed with Transport Scotland.
- 13 The list of choices and options for Category 2 and 3 Structures shall be recorded in an Annex to the SDS and Designer record as appropriate.
- 14 List the main structural elements for superstructure, substructure and foundation.
- 15 It should be clearly stated, where values of soil parameters are given, whether the values are characteristic or design values, e.g.  $\phi_k$  or  $\phi_d$  respectively.
- 16 When the Geotechnical Design Report becomes available , an addendum to the SDS, covering section 6, must be submitted to the Contracting Authority. The addendum must have its own sections 8 and 9 to provide a list of drawings, documents and signatures.
- 17 Where appropriate, also include:
  - a) Relevant extracts from the Geotechnical Design Report;
  - b) Methods of dealing with aspects not covered by Standards;
  - c) Departures from Standard and
  - c) Relevant correspondence and documents from consultations.
- 18 The relevant Design Standards are given in Annex A below to this Appendix K.
- 19 CEng, MICE, MStructE or equivalent.

## **STRUCTURES DESIGN STATEMENT**

### **ANNEX A**

#### **Technical Standards Schedule for New Works Design**

## Part 2 Specific Requirements

It is the responsibility of the compiler of the Structures Design Statement and/or the design or check certificate compiler to ensure that the Standards, references and clauses used, including amendments and corrigenda, are relevant and current at the Base Date.

Documents in *italics* are under preparation at the time of publication of this document.

All Standards and Documents not used shall be struck through.

**Schedule of Documents Relating to  
Design of Highway Bridges and Structures  
using Structural Eurocodes**

| <b>British Standards</b><br>(non-conflicting with Structural Eurocodes) |                                                                                                                                            |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| BS 4449:2005 + A2:2009                                                  | Steel for the reinforcement of concrete – Weldable reinforcing steel – Bar, coil and decoiled product – Specification                      |
| BS 4483:2005                                                            | Steel fabric for the reinforcement of concrete – Specification                                                                             |
| BS 5896:2012                                                            | High tensile steel wire and strand for the prestressing of concrete – Specification                                                        |
| BS 6779-4:1999                                                          | Highway parapets for bridges and other structures – Part 4: Specification for parapets of reinforced and unreinforced masonry construction |
| BS 7818:1995                                                            | Specification for pedestrian restraint systems in metal                                                                                    |
| BS 8006-1:2010                                                          | Code of practice for strengthened / reinforced soils and other fills                                                                       |
| BS 8500-1:2006 + A1:2012                                                | Concrete – Complementary British Standard to BS EN 206-1 Part 1: Method of specifying and guidance for the specifier                       |
| BS 8666:2005                                                            | Scheduling, dimensioning, bending and cutting of steel reinforcement for concrete – Specification                                          |
| BS EN 1317-1:2010<br>Road restraint systems – Part 1                    | Terminology and general criteria for test methods                                                                                          |
| BS EN 1317-2:2010<br>Road restraint systems – Part 2                    | Performance classes, impact test acceptance criteria and test methods for safety barriers including vehicle parapets                       |
| BS EN 1317-3:2010<br>Road restraint systems – Part 3                    | Performance classes, impact test acceptance criteria and test methods for crash cushions                                                   |
| <i>BS EN 1317-4:1998<br/>Road restraint systems – Part 4</i>            | <i>Performance classes, impact test acceptance criteria and test methods for terminals and crash cushions</i>                              |
| BS EN 1317-5:2007 + A1:2008<br>Road restraint systems – Part 5          | Product requirements and evaluation of conformity for vehicle restraint systems                                                            |

## Part 2 Specific Requirements

**British Standards**

(non-conflicting with Structural Eurocodes)

|                            |                                                                                                                  |
|----------------------------|------------------------------------------------------------------------------------------------------------------|
| BS EN 10025-1:2004         | Hot rolled products of structural steels – Part 1: General technical delivery conditions                         |
| BS EN 10025-2:2004         | Hot rolled products of structural steels – Part 2: Technical delivery conditions for non-alloy structural steels |
| BS EN 13369:2004 + A2:2006 | Common rules for precast concrete products                                                                       |
| BS EN 14844:2006 + A2:2011 | Precast concrete products. Box culverts                                                                          |
| BS EN 15050:2007 + A1:2012 | Precast concrete products. Bridge elements                                                                       |

**Structural Eurocodes**

|                                     |                                                                                                                                       |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| BS EN 1990:2002 + A1:2005           | Eurocode: Basis of structural design                                                                                                  |
| NA to BS EN 1990:2002 + A1:2005     | UK National Annex to Eurocode: Basis of structural design                                                                             |
| BS EN 1991-1-1:2002                 | Eurocode 1: Actions on structures. Part 1-1: General Actions: Densities, self-weight, imposed load for buildings                      |
| NA to BS EN 1991-1-1:2002           | UK National Annex to Eurocode 1: Actions on structures. Part 1-1: General Actions. Densities, self-weight, imposed load for buildings |
| BS EN 1991-1-3:2003                 | Eurocode 1: Actions on structures – Part 1-3: General Actions: Snow loads                                                             |
| NA to BS EN 1991-1-3:2003           | UK National Annex to Eurocode 1: Actions on structures. Part 1-3: General Actions. Snow loads                                         |
| BS EN 1991-1-4:2005 + A1:2010       | Eurocode 1: Actions on structures – Part 1-4: General Actions: Wind actions                                                           |
| NA to BS EN 1991-1-4:2005 + A1:2010 | UK National Annex to Eurocode 1: Actions on structures. Part 1-4: General Actions. Wind actions                                       |
| BS EN 1991-1-5:2003                 | Eurocode 1: Actions on structures – Part 1-5: General Actions: Thermal actions                                                        |
| NA to BS EN 1991-1-5:2003           | UK National Annex to Eurocode 1: Actions on structures. Part 1-5: General Actions. Thermal actions                                    |
| BS EN 1991-1-6:2005                 | Eurocode 1: Actions on structures – Part 1-6: General Actions: Actions during execution                                               |
| NA to BS EN 1991-1-6:2005           | UK National Annex to Eurocode 1: Actions on structures. Part 1-6: General Actions. Actions during execution                           |
| BS EN 1991-1-7:2006                 | Eurocode 1: Actions on structures – Part 1-7: General Actions: Accidental actions                                                     |



## Part 2 Specific Requirements

| <b>Structural Eurocodes</b> |                                                                                                                                                  |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| NA to BS EN 1991-1-7:2006   | UK National Annex to Eurocode 1: Actions on structures. Part 1-7: General Actions. Accidental actions                                            |
| BS EN 1991-2:2003           | Eurocode 1: Actions on structures – Part 2: Traffic loads on bridges                                                                             |
| NA to BS EN 1991-2:2003     | UK National Annex to Eurocode 1: Actions on structures. Part 2: Traffic loads on bridges                                                         |
| BS EN 1992-1-1:2004         | Eurocode 2: Design of concrete structures – Part 1-1: General rules and rules for buildings                                                      |
| NA to BS EN 1992-1-1:2004   | UK National Annex to Eurocode 2: Design of concrete structures – Part 1-1: General rules and rules for buildings                                 |
| BS EN 1992-2:2005           | Eurocode 2: Design of concrete structures – Part 2: Concrete bridges – Design and detailing rules                                                |
| NA to BS EN 1992-2:2005     | UK National Annex to Eurocode 2: Design of concrete structure – Part 2: Concrete bridges – Design and detailing rules                            |
| BS EN 1992-3:2006           | Eurocode 2: Design of concrete structures – Part 3: Liquid retaining and containment structures                                                  |
| NA to BS EN 1992-3:2006     | UK National Annex to Eurocode 2: Design of concrete structures – Part 3: Liquid retaining and containment structures                             |
| BS EN 1993-1-1:2005         | Eurocode 3: Design of steel structures – Part 1-1: General rules and rules for buildings                                                         |
| NA to BS EN 1993-1-1:2005   | UK National Annex to Eurocode 3: Design of steel structure – Part 1-1: General rules and rules for buildings                                     |
| BS EN 1993-1-3:2006         | Eurocode 3: Design of steel structures – Part 1-3 General rules – Supplementary rules for cold-formed members and sheeting                       |
| NA to BS EN 1993-1-3:2006   | UK National Annex to Eurocode 3: Design of steel structures – Part 1-3: General rules – Supplementary rules for cold-formed members and sheeting |
| BS EN 1993-1-4:2006         | Eurocode 3: Design of steel structures – Part 1-4: General rules – Supplementary rules for stainless steels                                      |
| NA to BS EN 1993-1-4:2006   | UK National Annex to Eurocode 3: Design of steel structures – Part 1-4: General rules – Supplementary rules for stainless steels                 |
| BS EN 1993-1-5:2006         | Eurocode 3: Design of steel structures – Part 1-5: Plated structural elements                                                                    |
| NA to BS EN 1993-1-5:2006   | UK National Annex to Eurocode 3: Design of steel structure – Part 1-5: Plated structural elements                                                |
| BS EN 1993-1-6:2007         | Eurocode 3: Design of steel structures – Part 1-6 Strength and stability of shell structures                                                     |
| NA to BS EN 1993-1-6:2007   | <i>UK National Annex to Eurocode 3: Design of steel structure – Part 1-6: Strength and stability of shell structures</i>                         |
| BS EN 1993-1-7:2007         | Eurocode 3: Design of steel structures – Part 1-7 Plated structures subject to out of plane loading                                              |

## Part 2 Specific Requirements

| <b>Structural Eurocodes</b>         |                                                                                                                                                 |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| NA to BS EN 1993-1-7:2007           | UK National Annex to Eurocode 3: Design of steel structures – Part 1-7: Plated structures subject to out of plane loading                       |
| BS EN 1993-1-8:2005                 | Eurocode 3: Design of steel structures – Part 1-8: Design of joints                                                                             |
| NA to BS EN 1993-1-8:2005           | UK National Annex to Eurocode 3: Design of steel structures – Part 1-8: Design of joints                                                        |
| BS EN 1993-1-9:2005                 | Eurocode 3: Design of steel structures – Part 1-9: Fatigue                                                                                      |
| NA to BS EN 1993-1-9:2005           | UK National Annex to Eurocode 3: Design of steel structures – Part 1-9: Fatigue                                                                 |
| BS EN 1993-1-10:2005                | Eurocode 3: Design of steel structures – Part 1-10: Material toughness and through-thickness properties                                         |
| NA to BS EN 1993-1-10:2005          | UK National Annex to Eurocode 3: Design of steel structures – Part 1-10: Material toughness and through-thickness properties                    |
| BS EN 1993-1-11:2006                | Eurocode 3: Design of steel structures – Part 1-11: Design of structures with tension components                                                |
| NA to BS EN 1993-1-11:2006          | UK National Annex to Eurocode 3: Design of steel structures – Part 1-11: Design of structures with tension components                           |
| BS EN 1993-1-12:2007                | Eurocode 3: Design of steel structures – Part 1-12: Additional rules for the extension of EN 1993 up to steel grades S 700                      |
| NA to BS EN 1993-1-12:2007          | UK National Annex to Eurocode 3: Design of steel structures – Part 1-12: Additional rules for the extension of EN 1993 up to steel grades S 700 |
| BS EN 1993-2:2006 + A1:2012         | Eurocode 3: Design of steel structures – Part 2: Steel bridges                                                                                  |
| NA to BS EN 1993-2:2006             | UK National Annex to Eurocode 3: Design of steel structures – Part 2: Steel bridges                                                             |
| BS EN 1993-5:2007                   | Eurocode 3: Design of steel structures – Part 5: Piling                                                                                         |
| NA to BS EN 1993-5:2007 + A1:2012   | UK National Annex to Eurocode 3: Design of steel structures – Part 5: Piling                                                                    |
| BS EN 1994-2:2005                   | Eurocode 4: Design of composite steel and concrete structures – Part 2: General rules and rules for bridges                                     |
| NA to BS EN 1994-2:2005             | National Annex to Eurocode 4: Design of composite steel and concrete structures – Part 2: General rules and rules for bridges                   |
| BS EN 1995-1-1:2004 + A1:2008       | Eurocode 5: Design of timber structures – Part 1-1: General – Common rules and rules for buildings                                              |
| NA to BS EN 1995-1-1:2004 + A1:2008 | UK National Annex to Eurocode 5: Design of timber structures – Part 1-1: General – Common rules and rules for buildings                         |
| BS EN 1995-2:2004                   | Eurocode 5: Design of timber structures – Part 2: Bridges                                                                                       |
| NA to BS EN 1995-2:2004             | UK National Annex to Eurocode 5: Design of timber structures – Part 2: Bridges                                                                  |

## Part 2 Specific Requirements

| <b>Structural Eurocodes</b>         |                                                                                                                                                      |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| BS EN 1996-1-1:2005                 | Eurocode 6: Design of masonry structures – Part 1-1: General rules for reinforced and unreinforced masonry structures                                |
| NA to BS EN 1996-1-1:2005           | UK National Annex to Eurocode 6: Design of masonry structures – Part 1-1: General rules for reinforced and unreinforced masonry structures           |
| BS EN 1996-2:2006                   | Eurocode 6: Design of masonry structures – Part 2: Design considerations, selection of materials and execution of masonry                            |
| NA to BS EN 1996-2:2006             | UK National Annex to Eurocode 6: Design of masonry structures – Part 2: Design considerations, selection of materials and execution of masonry       |
| BS EN 1996-3:2006                   | Eurocode 6: Design of masonry structures – Part 3: Simplified calculation methods for unreinforced masonry structures                                |
| NA to BS EN 1996-3:2006             | UK National Annex to Eurocode 6: Design of masonry structures – Part 3: Simplified calculation methods for unreinforced masonry structures           |
| BS EN 1997-1:2004                   | Eurocode 7: Geotechnical design – Part 1: General rules                                                                                              |
| NA to BS EN 1997-1:2004             | UK National Annex to Eurocode 7: Geotechnical design – Part 1: General rules                                                                         |
| BS EN 1997-2:2007                   | Eurocode 7: Geotechnical design – Part 2: Ground investigation and testing                                                                           |
| NA to BS EN 1997-2:2007             | UK National Annex to Eurocode 7: Geotechnical design – Part 2: Ground investigation and testing                                                      |
| BS EN 1998-1:2004                   | Eurocode 8: Design of structures for earthquake resistance – Part 1: General rules, seismic actions and rules for buildings                          |
| NA to BS EN 1998-1:2004             | Eurocode 8: Design of structures for earthquake resistance – Part 1: General rules, seismic actions and rules for buildings                          |
| BS EN 1998-2:2005 + A2:2011         | Eurocode 8: Design of structures for earthquake resistance – Part 2: Bridges                                                                         |
| NA to BS EN 1998-2:2005             | UK National Annex to Eurocode 8: Design of structures for earthquake resistance – Part 2: Bridges                                                    |
| BS EN 1998-5:2004                   | Eurocode 8: Design of structures for earthquake resistance – Part 5: Foundations, retaining structures and geotechnical aspects                      |
| NA to BS EN 1998-5:2004             | UK National Annex to Eurocode 8: Design of structures for earthquake resistance – Part 5: Foundations, retaining structures and geotechnical aspects |
| BS EN 1999-1-1:2007 + A1:2009       | Eurocode 9: Design of aluminium structures – Part 1-1: General structural rules                                                                      |
| NA to BS EN 1999-1-1:2007 + A1:2009 | UK National Annex to Eurocode 9: Design of aluminium structures – Part 1-1: General structural rules                                                 |
| BS EN 1999-1-3:2007 + A1:2011       | Eurocode 9: Design of aluminium structures – Part 1-3: Structures susceptible to fatigue                                                             |

## Part 2 Specific Requirements

| <b>Structural Eurocodes</b>                                           |                                                                                                               |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| NA to BS EN 1999-1-3:2007+ A1:2011                                    | UK National Annex to Eurocode 9: Design of aluminium structures – Part 1-3: Structures susceptible to fatigue |
| BS EN 1999-1-4:2007+A1:20113:2007                                     | Eurocode 9: Design of aluminium structures – Part 1-4 Cold formed structural sheeting                         |
| NA to BS EN 1999-1-4:2007                                             | UK National Annex to Eurocode 9: Design of aluminium structures – Part 1-4: Cold formed structural sheeting   |
| <b>BSI Published Documents (To be used with Structural Eurocodes)</b> |                                                                                                               |
| <i>PD 6704</i>                                                        | <i>Guidance on the design of structures to the UK National Annex to BS EN 1990</i>                            |
| PD 6688-1-1:2011                                                      | Background paper to the UK National Annex to BS EN 1991-1-1                                                   |
| PD 6688-1-4: 2009                                                     | Background information to the National Annex to BS EN 1991-1-4 and additional guidance                        |
| <i>PD 6688-1-5</i>                                                    | <i>Background paper to the UK National Annex to BS EN 1991-1-5</i>                                            |
| PD 6688-1-7: 2009                                                     | Recommendations for the design of structures to BS EN 1991-1-7                                                |
| PD 6688-2:2007                                                        | Recommendations for the design of structures to BS EN 1991-2                                                  |
| PD 6687-1:2010                                                        | Background paper to the National Annexes to BS EN 1992-1 and BS EN 1992-3                                     |
| PD 6687-2:2008                                                        | Recommendations for the design of structures to BS EN 1992-2:2005                                             |
| PD 6695-1-9:2008                                                      | Recommendations for the design of structures to BS EN 1993-1-9                                                |
| PD 6695-1-10: 2009                                                    | Recommendations for the design of structures to BS EN 1993-1-10                                               |
| PD 6695-2:2008 + A1:2012                                              | Recommendation for the design of bridges to BS EN 1993                                                        |
| <i>PD 6695-5</i>                                                      | <i>Background paper to the UK National Annex to BS EN 1993-5</i>                                              |
| PD 6705-2:2010                                                        | Recommendations for the execution of steel bridges to BS EN 1090-2                                            |
| PD 6696-2:2007 + A1:2012                                              | Background paper to BS EN 1994-2 and the UK National Annex to BS EN 1994-2                                    |
| PD 6697 2010                                                          | Recommendations for the design of masonry structures to BS EN 1996-1-1 and BS EN 1996-2                       |
| PD 6694-1:2011                                                        | Recommendations for the design of structures subject to traffic loading to BS EN 1997-1                       |
| PD 6698: 2009                                                         | Recommendations for the design of structures for earthquake resistance to BS EN 1998                          |
| PD 6702-1:2009                                                        | Recommendations for the design of aluminium structures to BS EN 1999                                          |
| PD 6705-3:2009                                                        | Recommendations for the execution of aluminium structures to BS EN 1090-3                                     |
| PD 6703: 2009                                                         | Structural Bearings - Guidance on the use of structural bearings                                              |

## Part 2 Specific Requirements

**Execution Standards**

|                             |                                                                                                                                  |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| BS EN 1090-1:2009 + A1:2011 | Execution of steel structures and aluminium structures – Part 1: Requirements for conformity assessment of structural components |
| BS EN 1090-2: 2008+ A1:2011 | Execution of steel structures and aluminium structures – Part 2: Technical requirements for the execution of steel structures    |
| BS EN 1090-3:2008           | Execution of steel structures and aluminium structures – Part 3: Technical requirements for aluminium structures                 |
| BS EN 13670:2009            | Execution of concrete structures                                                                                                 |

**The Manual of Contract Documents for Highway Works (MCHW)**

Volume 1: Specification for Highway Works

Volume 2: Notes for Guidance on the Specification for Highway Works

Volume 3: Highway Construction Details

**Design Manual for Roads and Bridges (DMRB)**

General Requirements, Standards (GD Series)

|       |                                                         |
|-------|---------------------------------------------------------|
| GD 01 | Introduction to the Design Manual for Roads and Bridges |
| GD 02 | Quality Management Systems for Highway Design           |

**Design Manual for Roads and Bridges (DMRB)**

Bridges and Structures, Advice Notes (BA Series)

|          |                                                                                         |
|----------|-----------------------------------------------------------------------------------------|
| BA 26/94 | Expansion Joints for use in Highway Bridge Decks                                        |
| BA 28/92 | Evaluation of Maintenance Costs in Comparing Alternative Designs for Highway Structures |
| BA 41/98 | The Design and Appearance of Bridges                                                    |
| BA 47/99 | Waterproofing and Surfacing of Concrete Bridge Decks                                    |
| BA 67/96 | Enclosure of Bridges                                                                    |
| BA 68/97 | Crib Retaining Walls                                                                    |
| BA 82/00 | Formation of Continuity Joints in Bridge Decks                                          |
| BA 85/04 | Coatings for Concrete Highway Structures & Ancillary Structures                         |
| BA 92/07 | The Use of Recycled Concrete Aggregates in Structural Concrete                          |

**Design Manual for Roads and Bridges (DMRB)**

Bridges and Structures, Standards (BD Series)

|          |                                                                                                      |
|----------|------------------------------------------------------------------------------------------------------|
| BD 7/01  | Weathering Steel for Highway Structures                                                              |
| BD 10/97 | Design of Highway Structures in Areas of Mining Subsidence                                           |
| BD 12/01 | Design of Corrugated Steel Buried Structures with Spans greater than 0.9 metres and up to 8.0 metres |

## Part 2 Specific Requirements

**Design Manual for Roads and Bridges (DMRB)**

## Bridges and Structures, Standards (BD Series)

|          |                                                                                                                            |
|----------|----------------------------------------------------------------------------------------------------------------------------|
| BD 29/04 | Design Criteria for Footbridges                                                                                            |
| BD 33/94 | Expansion Joints for use in Highway Bridge Decks                                                                           |
| BD 35/06 | Quality Assurance Scheme for Paints and Similar Protective Coatings                                                        |
| BD 36/92 | Evaluation of Maintenance Costs in Comparing Alternative Designs for Highway Structures                                    |
| BD 41/97 | Reinforced clay brickwork retaining walls of pocket type and grouted cavity type construction – use of BS 5628:Part 2:1995 |
| BD 43/03 | The Impregnation of Reinforced and Prestressed concrete Highway Structures using Hydrophobic Pore-Lining Impregnants       |
| BD 47/99 | Waterproofing and Surfacing of Concrete Bridge Decks                                                                       |
| BD 51/98 | Portal and Cantilever Signs / Signal Gantries                                                                              |
| BD 62/07 | As-built, Operational and Maintenance Records for Highway Structures                                                       |
| BD 65/97 | Design Criteria for Collision Protection Beams                                                                             |
| BD 67/96 | Enclosure of Bridges                                                                                                       |
| BD 68/97 | Crib Retaining Walls                                                                                                       |
| BD 78/99 | Design of Road Tunnels                                                                                                     |
| BD 82/00 | Design of Rigid Buried Pipes                                                                                               |
| BD 90/05 | Design of FRP Bridges and Highway Structures                                                                               |
| BD 91/04 | Unreinforced Masonry Arch Bridges                                                                                          |
| BD 94/07 | Design of Minor Structures                                                                                                 |

**Design Manual for Roads and Bridges (DMRB)**

## Traffic Engineering and Control, Standards and Advice Notes (TD and TA Series)

|          |                                                                                         |
|----------|-----------------------------------------------------------------------------------------|
| TD 9/93  | Highway Link Design                                                                     |
| TD 19/06 | Requirement for Road Restraint Systems                                                  |
| TD 27/05 | Cross Sections and Headroom                                                             |
| TD 36/93 | Subways for Pedestrians and Cyclists, Layout and Dimensions                             |
| TD 89/08 | Use of Passively Safe Signposts, Lighting Columns & Traffic Signal Posts to BS EN 12767 |

**Design Manual for Roads and Bridges (DMRB)**

## Highways, Advice Notes (HA Series)

|           |                                                 |
|-----------|-------------------------------------------------|
| HA 66/95  | Environmental Barriers – Technical Requirements |
| HA 107/04 | Design of outfall and culvert details           |

## Part 2 Specific Requirements

**Design Manual for Roads and Bridges (DMRB)**

## Highways, Standards (HD Series)

|          |                                     |
|----------|-------------------------------------|
| HD 22/08 | Managing Geotechnical Risk          |
| HD 45/09 | Road Drainage and Water Environment |

**Transport Scotland Interim Amendments**

|                     |                                                                                                                                                       |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| TS IA 22            | Transport Scotland Interim Amendment No 22: Implementation of New Reinforcement Standards (BS 4449:2005, BS 4482:2005, BS 4483:2005 and BS 8666:2005) |
| TS IA 23 Revision 2 | Transport Scotland Interim Amendment No 23: Implementation of BS 8500-1:2006 Concrete – complimentary British Standard to BS EN 206-1                 |
| TS IA 24            | Transport Scotland Interim Amendment No 24: Guidance on implementing results on research on bridge deck waterproofing                                 |
| TS IA 25            | Transport Scotland Interim Amendment No 25: Assessment and upgrading of existing vehicle parapets                                                     |
| TS IA 26            | Transport Scotland Interim Amendment No 26: The Anchorage of Reinforcement & Fixings in Hardened Concrete                                             |
| TS IA 39            | Use of Eurocodes for the Design of Bridges and Road Related Structures                                                                                |

## **STRUCTURES DESIGN STATEMENT**

### **ANNEX B**

#### **Diagram of idealised structural analysis model**



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## **STRUCTURES DESIGN STATEMENT**

### **ANNEX C**

#### **Departures from Standard**

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## **STRUCTURES DESIGN STATEMENT**

### **ANNEX D**

#### **Drawings**

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## **STRUCTURES DESIGN STATEMENT**

### **ANNEX E**

#### **Choices and Options – Information to be Provided**

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## Part 2 Specific Requirements

**ANNEX E: PROJECT SPECIFIC INFORMATION TO BE RECORDED IN THE Structures Design Statement (SDS)**

A list of choices and options are compiled in this Annex.

It is the responsibility of the compiler of the SDS and the designer record to ensure that the Standards, references and clauses listed, including amendments and corrigenda, are relevant and current at the Base Date.

Information is to be recorded only if applicable and/or where recommended values/methods are not used.

All choices and options which are not applicable shall be struck through.

Where the information to be recorded in the SDS is not available at the time of its submission, this shall be noted. The information shall be added when available to the SDS, addendum SDS or addendum designer record as appropriate.

The designer record is where the Designer should record the choices and options selected. The designer record should be provided to the Checker and should be included in the As Built Records, together with the SDS and the Design and Check Certificates.

| Document and Clause for Choices and Options                      | Choices and Options                                                                                                                                                                                                    | Where recorded if applicable to the project | Comment |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------|
| BS EN 1990:2002 + A1:2005 Eurocode 0: Basis of structural design |                                                                                                                                                                                                                        |                                             |         |
| 2.1 Basic Requirements (4)P<br>NOTE 1                            | Define design events to be taken into account.                                                                                                                                                                         | SDS 4.1.7                                   |         |
| 3.4 Serviceability limit states (1)P<br>NOTE 2                   | Define the serviceability requirements.                                                                                                                                                                                | SDS 5.1 or 4.7                              |         |
| 4.1.2 Characteristic values of actions (8)                       | For accidental actions define the design value $A_d$ .                                                                                                                                                                 | Designer record                             |         |
| 4.1.2 Characteristic values of actions (9)                       | For seismic actions define the design value $A_{Ed}$ .                                                                                                                                                                 | Designer record                             |         |
| A2.1.1 General (1) NOTE 4                                        | Define the combination rules if clauses A2.2.2 to A2.2.5 are changed.                                                                                                                                                  | Designer record                             |         |
| A2.2.1 General (10) NOTE                                         | Define the requirements for snow loads and wind actions to be taken into account simultaneously with other construction loads (e.g. actions due to heavy equipment or cranes) during some transient design situations. | SDS 4.1.8                                   |         |
| A2.2.1 General (13) NOTE                                         | Specify limits on total settlement and differential settlement.                                                                                                                                                        | SDS 6.3                                     |         |



## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                           | Choices and Options                                                                                                                                                                                                                                        | Where recorded if applicable to the project | Comment                                                                                  |
|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------------|
| A2.2.1 General (15) NOTE 1                                                                            | Define variable actions to be taken into account for settlements.                                                                                                                                                                                          | Designer record                             |                                                                                          |
| A2.2.2 Combination rules for road bridges (3) NOTE                                                    | Define the combination rules for special vehicles with normal traffic and other variable actions.                                                                                                                                                          | SDS 4.1.2 or 4.6                            | Information to be recorded only if combination rules defined in NA.2.3.3.2 are not used. |
| A2.2.5 Combinations of actions for accidental (non seismic) design situations (2) NOTE 2              | Define additional combinations of actions for other accidental design situations.                                                                                                                                                                          | SDS 4.1.7 or 4.7                            |                                                                                          |
| A2.2.5 Combinations of actions for accidental (non seismic) design situations (4) NOTE                | For ship impact define additional requirements.                                                                                                                                                                                                            | SDS 4.1.7 or 4.7                            |                                                                                          |
| A2.2.6 Values of $\psi$ factors(1) NOTE 3                                                             | Define representative values of water forces ( $F_{wa}$ ).                                                                                                                                                                                                 | Designer record                             |                                                                                          |
| A2.2.6 Values of $\psi$ factors (1) NOTE 5                                                            | For specific design situations (e.g. calculation of bridge camber for aesthetics and drainage consideration, calculation of clearance, etc.) define the requirements for the combinations of actions to be used.                                           | Designer record                             |                                                                                          |
| Table A2.4(B) - Design values of actions (STR/GEO) (Set B) NOTE 5                                     | Where actions due to water are not covered by EN 1997 (e.g. flowing water), define the combinations of actions to be used.                                                                                                                                 | SDS 4.1.9 or 4.7                            | Advice is given in Table NA.A2.4(B) NOTE 2.                                              |
| Table A2.5 - Design values of actions for use in accidental and seismic combinations of actions (***) | Specify particular seismic design situations.                                                                                                                                                                                                              | SDS 4.6                                     | Information to be recorded only if the advice given in NA.2.3.8 is not adopted.          |
| A2.3.2 Design values of actions in the accidental and seismic design situations (2) NOTE              | As an example, in the case of bridges built by the cantilevered method, some construction loads may be considered as simultaneous with the action corresponding to the accidental fall of a prefabricated unit. Define the relevant representative values. | Designer record                             | Information needs to be passed to the Contractor.                                        |
| A2.4.3.1 Design situations and associated traffic assumptions (1) NOTE                                | Define the design situations.                                                                                                                                                                                                                              | SDS 4.1.3                                   |                                                                                          |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                 | Choices and Options                                                                                                                                       | Where recorded if applicable to the project | Comment                                                                        |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------|
| A2.4.3.1 Design situations and associated traffic assumptions (3) NOTE 1                    | Define traffic categories and the relevant design situations.                                                                                             | SDS 4.1.5                                   |                                                                                |
| NA to BS EN 1990:2002+A1:2005 – UK National Annex for Eurocode - Basis of structural design |                                                                                                                                                           |                                             |                                                                                |
| NA.2.1.1, Note                                                                              | The values of design working life in Table NA.2.1 are indicative. Alternative values of design working life may be determined for the individual project. | SDS 3.1                                     |                                                                                |
| NA.2.3.2 BS EN 1990(A1):2005, A.2.2.1(2), Note 1 General                                    | Determine combinations involving actions that are outside the scope of EN 1991.                                                                           | SDS 4.1.9 or 4.7                            |                                                                                |
| NA.2.3.3.3 A.2.2.2(4), Note                                                                 | Determine the combination of snow loads and group loads gr1a and gr1b.                                                                                    | SDS 4.1.2                                   | Information to be recorded only if recommended values or methods are not used. |
| NA.2.3.3.4 A.2.2.2(6), Note                                                                 | Depending upon the local climatic conditions determine a different simultaneity rule for wind and thermal actions.                                        | SDS 4.1.2                                   | Information to be recorded only if recommended values or methods are not used. |
| NA.2.3.4.1 A.2.2.3(2), Note                                                                 | Depending upon the local climatic conditions define a different simultaneity rule for wind and thermal actions.                                           | SDS 4.1.2                                   | Information to be recorded only if recommended values or methods are not used. |
| NA.2.3.4.2 A.2.2.3(3), Note                                                                 | Determine the combination of snow loads and group loads gr1a and gr1b.                                                                                    | SDS 4.1.2                                   | Information to be recorded only if recommended values or methods are not used. |
| NA.2.3.4.3 A.2.2.3(4), Note                                                                 | For footbridges on which pedestrian and cycle traffic is fully protected from all types of bad weather, determine combinations of actions.                | SDS 4.1.9 or 4.7                            |                                                                                |
| NA.2.3.6.3 A.2.2.6(1), Note 3                                                               | Determine representative values of water actions $F_{wa}$ .                                                                                               | Designer record                             |                                                                                |
| NA.2.3.7.3 A.2.3.1(7)                                                                       | Record general and local scour depths if assessed.<br>Define requirements for taking account of forces due to ice pressure on bridge piers, etc.          | SDS 4.1.9 or 4.7                            |                                                                                |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                | Choices and Options                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Where recorded if applicable to the project                                                                         | Comment |
|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------|
| NA.2.3.7.4 A.2.3.1(8)                                      | In the case where $\gamma_P$ values for prestressing actions are not provided in the relevant design Eurocodes, these values should be determined for the individual project.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SDS 4.1.9 or 4.7                                                                                                    |         |
| Table NA.A.2.4(A) – Design values of actions (EQU) (Set A) | <p>Prestressing <math>\gamma_P</math> as defined in the relevant design Eurocode or for the individual project.</p> <p>NOTE 2 For self-weight of water, ground-water pressure and other actions dependent on the level of water, no partial factor is specified in this National Annex. The design value of such actions may be directly assessed in accordance with 2.4.6.1 (2)P and 2.4.6.1(6)P of BS EN 1997-1:2004. Alternatively a safety margin may be applied to the characteristic water levels set out in 2.4.6.1(8) of BS EN 1997-1:2004. Partial factors for such actions may be determined for the individual project (see 2.4.7.3.2(2) of BS EN 1997-1:2004).</p> <p>NOTE 4 For all other actions, not covered in NOTES 1 to 3, the partial factors should be determined for the individual project.</p> <p>NOTE 7 Partial factors for actions involving aerodynamic effects of wind on bridges should be determined for the individual project. Guidance on the factors to be considered may be found in PD 6688-1-4:2009.</p> <p>NOTE 9 For verification of uplift of bearings of continuous bridges in cases where the verification of static equilibrium also involves the resistance of structural elements or the ground <math>\gamma</math> values may be determined for the individual project as an alternative to separate verifications based on Tables NA.A2.4(A)-(C), see also BS EN 1990:2002+A1:2005, 6.4.3.1(4).</p> | <p>SDS 4.1.9 or 4.7</p> <p>Designer record</p> <p>Designer record</p> <p>Designer record</p> <p>Designer record</p> |         |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                    | Choices and Options                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Where recorded if applicable to the project                                                                         | Comment |
|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------|
| Table NA.A.2.4(B) – Design values of actions (STR/GEO) (Set B) | <p>Prestressing <math>\gamma_p</math> as defined in the relevant design Eurocode or for the individual project.</p> <p>NOTE 2 For self-weight of water, ground-water pressure and other actions dependent on the level of water, no partial factor is specified in this National Annex. The design value of such actions may be directly assessed in accordance with 2.4.6.1 (2)P and 2.4.6.1(6)P of BS EN 1997-1:2004. Alternatively a safety margin may be applied to the characteristic water level (see 2.4.6.1(8) of BS EN 1997-1:2004). Partial factors for such actions may be determined for the individual project (see 2.4.7.3.2(2) of BS EN 1997-1:2004).</p> <p>NOTE 4 For all other actions, not covered in NOTES 1 to 3, the partial factors should be determined for the individual project.</p> <p>NOTE 7 Partial factors for actions involving aerodynamic effects of wind on bridges should be determined for the individual project. Guidance on the factors to be considered may be found in PD 6688-1-4:2009.</p> <p>NOTE 9 For particular verifications, the values of <math>\gamma_G</math> and <math>\gamma_Q</math> may be subdivided into <math>\gamma_g</math> and <math>\gamma_q</math> and the model uncertainty factor <math>\gamma_{Sd}</math>. A value of <math>\gamma_{Sd} = 1,15</math> can be used except where otherwise determined for the individual project.</p> | <p>SDS 4.1.9 or 4.7</p> <p>Designer record</p> <p>Designer record</p> <p>Designer record</p> <p>Designer record</p> |         |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                           | Choices and Options                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Where recorded if applicable to the project                                                                         | Comment |
|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------|
| Table NA.A.2.4(C) – Design values of actions (STR/GEO) (Set C)                                        | <p>Prestressing <math>\gamma_P</math> as defined in the relevant design Eurocode or for the individual project.</p> <p>NOTE 2 For self-weight of water, ground-water pressure and other actions dependent on the level of water, no partial factor is specified in this National Annex. The design value of such actions may be directly assessed in accordance with 2.4.6.1 (2)P and 2.4.6.1(6)P of BS EN 1997-1:2004. Alternatively a safety margin may be applied to the characteristic water level (see 2.4.6.1(8) of BS EN 1997-1:2004). Partial factors for such actions may be determined for the individual project and agreed with the relevant authority, but see 2.4.7.3.2(2) of BS EN 1997-1:2004.</p> <p>NOTE 4 For all other actions, not covered in NOTES 1 to 3, the partial factors should be determined for the individual project.</p> <p>NOTE 7 Partial factors for actions involving aerodynamic effects of wind on bridges should be determined for the individual project. Guidance on the factors to be considered may be found in PD 6688-1-4:2009.</p> <p>NOTE 9 For particular verifications, the values of <math>\gamma_Q</math> may be sub-divided into <math>\gamma_q</math> and the model uncertainty factor <math>\gamma_{sd}</math>. A value of <math>\gamma_{sd}</math> between 1,05 and 1,15, should be determined for the individual project.</p> | <p>SDS 4.1.9 or 4.7</p> <p>Designer record</p> <p>Designer record</p> <p>Designer record</p> <p>Designer record</p> |         |
| Table NA.A2.5 – Design values of actions for use in accidental and seismic combinations of actions B) | The seismic design situation should be used only when specified for the individual project (see BS EN 1998).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | SDS 4.1.9                                                                                                           |         |
| NA 2.3.9.3 A.2.4.1(2) Note                                                                            | Determine serviceability requirements and criteria.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SDS 5.1                                                                                                             |         |
| NA.3.2.1 Annex B                                                                                      | Record if a design for a lower or higher consequence class is considered.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SDS 3.6.1                                                                                                           |         |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                                                                           | Choices and Options                                                                                                                                                         | Where recorded if applicable to the project | Comment                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------|
| NA.3.2.2 Annex C                                                                                                                                      | Record if a design based on probabilistic methods is considered.                                                                                                            | SDS 5.1                                     |                                                                                |
| BS EN 1991-1-1:2002 Eurocode 1: Actions on structures. General Actions. Densities, self-weight, imposed load for buildings                            |                                                                                                                                                                             |                                             |                                                                                |
| 4.1 General (1) NOTE                                                                                                                                  | Define selected values of densities when a range is given in the table in Annex A.                                                                                          | SDS 4.1.1                                   |                                                                                |
| 4.1 General 2)                                                                                                                                        | For materials (e.g. new and innovative materials) which are not covered by the Tables in Annex A, define the characteristic value of the density.                           | SDS 4.1.1                                   |                                                                                |
| NA to BS EN 1991-1-1:2002 UK National Annex to Eurocode 1: Actions on structures. General Actions. Densities, self-weight, imposed load for buildings |                                                                                                                                                                             |                                             |                                                                                |
| Table NA.1 Characteristic values of self-weight — UK guidance on additional provisions for bridges – 5.2.3(1)                                         | Define self-weight of fill.                                                                                                                                                 | SDS 4.1.1                                   |                                                                                |
| BS EN 1991-1-3:2003 Eurocode 1: Actions on structures. General Actions. Snow loads                                                                    |                                                                                                                                                                             |                                             |                                                                                |
| 1.5 Design assisted by testing                                                                                                                        | Tests and proven and/or properly validated numerical methods to obtain snow loads on the construction works.                                                                | SDS 4.1.2                                   | Information to be recorded only if recommended values or methods are not used. |
| 4.1 Characteristic values (1) NOTE 1                                                                                                                  | When there are unusual local conditions that need to be taken into account in the characteristic value of snow load on the ground (see NA to BS EN 1991-1-3 clause NA.2.8). | SDS 4.1.2                                   | Information to be recorded only if recommended values or methods are not used. |
| NA to BS EN 1991-1-5:2003 UK National Annex to Eurocode 1: Actions on structures. General Actions. Thermal actions                                    |                                                                                                                                                                             |                                             |                                                                                |
| NA.2.2.1 General (2 <sup>nd</sup> paragraph)                                                                                                          | The uniform temperature component and temperature difference component for other types of bridges not covered in BS EN 1991-1-5.                                            | SDS 4.1.2 or 4.7                            | Information to be recorded only if recommended values or methods are not used. |
| NA.2.3 Consideration of thermal actions<br>[BS EN 1991-1-5:2003, 6.1.2(2)]                                                                            | Use of Approach 1.                                                                                                                                                          | SDS 4.1.2                                   | Information to be recorded only if recommended values or methods are not used. |
| NA.2.7 Temperature difference components<br>[BS EN 1991-1-5:2003, 6.1.4(3)]                                                                           | The initial temperature difference at the closure of cantilever construction.                                                                                               | Designer record                             |                                                                                |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                      | Choices and Options                                                                                                          | Where recorded if applicable to the project | Comment                                                                        |
|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------|
| BS EN 1991-1-6:2005 Eurocode 1: Actions on structures. General Actions. Actions during execution |                                                                                                                              |                                             |                                                                                |
| 1.1 Scope (1) NOTE 2                                                                             | Define rules concerning the safety of people in and around the construction site. (Out of the scope of this BS EN 1991-1-6.) | SDS 3.1                                     |                                                                                |
| 2.2 Construction loads (3) NOTE                                                                  | Where construction loads are classified as fixed, define tolerances for possible deviations from theoretical position.       | Designer record                             |                                                                                |
| 3.1 General – identification of design situations (12) NOTE                                      | For long construction phases, define the scour levels.                                                                       | Designer record                             |                                                                                |
| 3.3 Serviceability limit states (5) NOTE                                                         | Define the frequent values of particular actions which need to be considered.                                                | Designer record                             |                                                                                |
| 4.1 General (5) NOTE                                                                             | Define the friction coefficients.                                                                                            | Designer record                             |                                                                                |
| 4.4 Actions due to prestressing (1) NOTE                                                         | Define specific requirements of prestressing forces during execution.                                                        | Designer record                             |                                                                                |
| 4.7 Wind actions (1) NOTE                                                                        | Define the dynamic response design criteria and procedures for wind actions for the execution stages.                        | Designer record                             |                                                                                |
| 4.7 Wind actions (3) NOTE                                                                        | Define the maximum wind speed for lifting and moving operations or other construction phases that are of short duration.     | Designer record                             |                                                                                |
| 4.9 Actions caused by water (2) NOTE                                                             | Define the classification of actions caused by water as permanent or variable.                                               | Designer record                             |                                                                                |
| 4.9 (4) Note 1                                                                                   | A more refined formulation is used to determine $F_{wa}$ .                                                                   | Designer record                             | Information to be recorded only if recommended values or methods are not used. |
| 4.9 (5) Note 1                                                                                   | If expression (4.2) is adjusted.                                                                                             | Designer record                             | Information to be recorded only if recommended values or methods are not used. |
| Table 4.1 Representation of construction loads ( $Q_c$ ) Note 4                                  | If the recommended characteristic value $q_{cc,k}$ is not used.                                                              | Designer record                             | Information to be recorded only if recommended values or methods are not used. |
| 4.11.1 General (1) Note 2                                                                        | Define the groupings of loads to be taken into account.                                                                      | Designer record                             |                                                                                |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                                                 | Choices and Options                                                                                                | Where recorded if applicable to the project | Comment |
|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------|
| NA to BS EN 1991-1-6:2005 UK National Annex to Eurocode 1: Actions on structures. General Actions. Actions during execution |                                                                                                                    |                                             |         |
| NA.2.1 Design rules for auxiliary construction works                                                                        | Define design rules for auxiliary construction works.                                                              | Designer record                             |         |
| NA.2.2 Positioning of construction loads classified as "free"                                                               | Define the limits of movement for construction loads classified as "free".                                         | Designer record                             |         |
| NA.2.4 Return periods for the determination of the characteristic values of variable actions during execution               | Define the return periods for the determination of the characteristic values of variable actions during execution. | Designer record                             |         |
| NA.2.5 Minimum wind speed during execution                                                                                  | Define the minimum wind velocity during execution.                                                                 | Designer record                             |         |
| NA.2.6 Rules for the combination of snow loads and wind actions with construction loads                                     | Define rules for combination of snow loads and wind actions with construction loads.                               | Designer record                             |         |
| NA.2.7 Rules concerning imperfections in the geometry of the structure                                                      | Define the imperfections in the geometry of the structure and of structural members.                               | Designer record                             |         |
| NA.2.8 Criteria associated with serviceability limit states during execution                                                | Define the criteria associated with serviceability limit states during execution.                                  | Designer record                             |         |
| NA.2.9 Serviceability requirements for auxiliary construction works                                                         | Define serviceability requirements for auxiliary construction works.                                               | Designer record                             |         |
| NA.2.10 Actions due to ice, including floating ice                                                                          | Define the loads and water levels associated with actions due to ice, including floating ice.                      | Designer record                             |         |
| NA.2.11 Actions due to atmospheric icing                                                                                    | Define the representative values of the actions due to atmospheric icing.                                          | Designer record                             |         |



## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                            | Choices and Options                                                                                        | Where recorded if applicable to the project | Comment                                                                        |
|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------|
| NA.2.12 Recommended characteristic values of construction load $Q_{cb}$                | Only record if the recommended minimum values $Q_{ca}$ and $Q_{cb}$ are not to be used.                    | Designer record                             | Information to be recorded only if recommended values or methods are not used. |
| NA.2.13 Construction loads during the casting of concrete                              | Only record if the recommended minimum values $Q_{ca}$ and $Q_{cc}$ are not to be used.                    | Designer record                             | Information to be recorded only if recommended values or methods are not used. |
| NA.2.14 Dynamic effects due to accidental actions                                      | Define dynamic effects due to accidental actions.                                                          | Designer record                             |                                                                                |
| NA.2.15 Dynamic effects due to falls of equipment                                      | Define dynamic effects due to falls of equipment.                                                          | Designer record                             |                                                                                |
| NA.2.17 Seismic actions                                                                | Define the design values for ground acceleration and the importance factor $\gamma_i$ for seismic actions. | Designer record                             |                                                                                |
| NA.2.19 Characteristic values of equivalent horizontal forces                          | Define the characteristic values of equivalent horizontal forces.                                          | Designer record                             |                                                                                |
| NA.2.20 Design values of vertical deflections for the incremental launching of bridges | Define the design values of vertical deflections for the incremental launching of bridges                  | Designer record                             |                                                                                |
| NA.2.21 Reduction of the characteristic value of snow loads                            | Define the reduction of the characteristic value of snow loads.                                            | Designer record                             |                                                                                |
| NA.2.23 Design values of horizontal friction forces                                    | Define the design values of horizontal friction forces.                                                    | Designer record                             |                                                                                |
| NA.2.24 Determination of friction coefficients $\mu_{min}$ and $\mu_{max}$             | Define the friction coefficients $\mu_{min}$ and $\mu_{max}$ .                                             | Designer record                             |                                                                                |
| NA.3.1 Actions on structures during alteration, reconstruction or demolition           | If Annex B is to be used for trunk road or railway structures.                                             | SDS 4.1.8                                   | Information to be recorded only if Annex B is used.                            |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                                             | Choices and Options                                                                                                     | Where recorded if applicable to the project | Comment                                                                        |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------|
| BS EN 1991-1-7:2006 Eurocode 1: Actions on structures. General Actions. Accidental actions                              |                                                                                                                         |                                             |                                                                                |
| B.5 Risk acceptance and mitigating measures (4) 2 <sup>nd</sup> paragraph                                               | Define risk acceptance levels                                                                                           | SDS 4.1.7                                   | Information to be recorded only if recommended values or methods are not used. |
| NA to BS EN 1991-1-7:2006 UK National Annex to Eurocode 1: Actions on structures. Part 1-7 : Accidental actions         |                                                                                                                         |                                             |                                                                                |
| NA.2.1 Classification of accidental actions [BS EN 1991-1-7:2006, 2 (2)]                                                | Define accidental actions which are not free actions.                                                                   | Designer record                             |                                                                                |
| NA.2.8 Design approaches [BS EN 1991-1-7:2006, 3.4 (2) Note]                                                            | For the design of structures for higher and lower consequence classes define the requirements.                          | SDS 4.1.7                                   | Information to be recorded only if recommended values or methods are not used. |
| NA.2.11.2.4.1                                                                                                           | Define the values for $T_a$ and $T_b$ .                                                                                 | SDS 4.1.7                                   |                                                                                |
| NA.2.33 Classification system for ships on sea waterways [BS EN 1991-1-7:2006, 4.6.1 (3) Note 1]                        | Define the characteristics of ships on sea waterways to be taken into account in the case of ship impact on structures. | SDS 4.1.7                                   |                                                                                |
| NA.2.34 Values of frontal and lateral dynamic forces from river and canal traffic [BS EN 1991-1-7:2006, 4.6.2 (1) Note] | Define the values of frontal and lateral dynamic forces due to impact from river and canal traffic.                     | SDS 4.1.7                                   |                                                                                |
| NA.2.36 Application area of impact [BS EN 1991-1-7:2006, 4.6.2 (3) Note 1]                                              | Define the height of application of the impact force and the impact area $b \times h$ .                                 | SDS 4.1.7                                   |                                                                                |
| NA.2.37 Impact forces on bridge decks from ships [BS EN 1991-1-7:2006, 4.6.2 (4) Note]                                  | Define the equivalent static impact forces on bridge decks from ships.                                                  | SDS 4.1.7                                   |                                                                                |
| NA.2.38 Dynamic impact forces from seagoing ships [BS EN 1991-1-7:2006, 4.6.3 (1) Note]                                 | Define the values of frontal and lateral dynamic impact forces from seagoing ships.                                     | SDS 4.1.7                                   |                                                                                |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                                                | Choices and Options                                                                    | Where recorded if applicable to the project | Comment                                                                        |
|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------|
| NA.2.40 Area and position of impact areas [BS EN 1991-1-7:2006, 4.6.3 (4)P Note]                                           | Define the area and position of impact areas.                                          | Designer record                             |                                                                                |
| NA.2.41 Forces on superstructure [BS EN 1991-1-7:2006, 4.6.3 (5) Note 1]                                                   | Define the forces on superstructure.                                                   | SDS 4.1.7                                   |                                                                                |
| NA.2.42 Procedures to be used for types of internal explosions [BS EN 1991-1-7:2006, 5.3 (1)P Note] (3 <sup>rd</sup> para) | Define the design requirements for dealing with internal explosions in road tunnels.   | SDS 4.1.7                                   |                                                                                |
| PD 6688-1-7:2009 Recommendations for the design of structures to BS EN 1991-1-7                                            |                                                                                        |                                             |                                                                                |
| 2.5.1 d) 1) Impact on supporting substructures – For foot and cycle track bridges                                          | Define the value for $T_c$ .                                                           | SDS 4.1.7                                   | See Annex B of this document.                                                  |
| BS EN 1991-2:2003 Eurocode 1: Actions on structures. Traffic loads on bridges                                              |                                                                                        |                                             |                                                                                |
| 4.2.1 Models of road traffic loads (1) Note 3                                                                              | If additional dynamic amplification is to be taken into account.                       | Designer record                             |                                                                                |
| 4.2.3 Divisions of the carriageway into notional lanes (4) Note                                                            | If the rules given in 4.2.3(4) are to be adjusted.                                     | Designer record                             |                                                                                |
| 4.3.5 Load Model 4 (crowd loading) (1) Note                                                                                | Define the application of LM4.                                                         | SDS 4.1.5                                   | Information to be recorded only if applicable.                                 |
| 4.6.1 General (2) Note 1                                                                                                   | If horizontal forces are to be taken into account simultaneously with vertical forces. | SDS 4.1.9                                   | Information to be recorded only if applicable.                                 |
| 4.6.1 General (2) Note 4                                                                                                   | If the values of Fatigue Load Models 1 and 2 are to be modified.                       | SDS 4.1.9                                   | Information to be recorded only if recommended values or methods are not used. |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                              | Choices and Options                                                                                                                 | Where recorded if applicable to the project | Comment                                                                        |
|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------|
| 4.6.2 Fatigue Load Model 1 (similar to LM1) (1) Note                                                     | If $q_{rk}$ is to be neglected.                                                                                                     | SDS 4.1.9                                   | Information to be recorded only if recommended values or methods are not used. |
| 4.7.3.4 Collision forces on structural members (2) Note                                                  | For some intermediate members where damage to one of which would not cause collapse (e.g. hangers or stays), define smaller forces. | SDS 4.1.7                                   |                                                                                |
| 4.8 Actions on pedestrian parapets (2) Note                                                              | Define whether pedestrian parapets can be considered as adequately protected.                                                       | SDS 3.7                                     |                                                                                |
| 5.1 Field of application (2) Note 2                                                                      | For large footbridges define complementary load models, with associated combination rules.                                          | SDS 4.1.5                                   |                                                                                |
| 5.2.1 Models of the loads (1) Note 1                                                                     | Define loads due to horses or cattle.                                                                                               | SDS 4.1.9 or 4.7                            |                                                                                |
| 5.6.1 General (1) Note                                                                                   | Define other collision forces.                                                                                                      | SDS 4.1.9 or 4.7                            | Information to be recorded only if recommended values or methods are not used. |
| 5.9 Load model for abutments and walls adjacent to bridges (1) Note 2                                    | If the characteristic value is to be adjusted.                                                                                      | SDS 4.1.9                                   | Information to be recorded only if recommended values or methods are not used. |
| NA to BS EN 1991-2:2003 UK National Annex to Eurocode 1: Actions on structures. Traffic loads on bridges |                                                                                                                                     |                                             |                                                                                |
| NA.2.3 Appropriate protection against collision                                                          | Define the requirements for protection against collision from road and rail traffic.                                                | SDS 4.1.7                                   |                                                                                |
| NA.2.5 Bridges carrying both road and rail traffic                                                       | Define the rules for bridges intended for both road and rail traffic.                                                               | SDS 4.7                                     |                                                                                |
| NA.2.7 Weight restricted bridges                                                                         | For road bridges where effective means are provided to strictly limit the weight of any vehicle, define specific load models.       | SDS 4.1.3                                   | Information to be recorded only if recommended values or methods are not used. |
| NA.2.8 Complementary load models                                                                         | Define complementary load models and rules for their application.                                                                   | SDS 4.1.9 or 4.7                            | Information to be recorded only if recommended values or methods are not used. |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                               | Choices and Options                                                                                                                                                                                                                  | Where recorded if applicable to the project | Comment                                                                        |
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| NA.2.9 Models for special vehicles                                        | Define complementary load models for special vehicles and rules for their application.                                                                                                                                               | SDS 4.1.9 or 4.7                            | Information to be recorded only if recommended values or methods are not used. |
| NA.2.16 Load Model 3 (Special Vehicles) (2 <sup>nd</sup> para)            | Define the choice of the particular STGO or SO model vehicle.                                                                                                                                                                        | SDS 4.1.4 and 4.1.6                         | Advice is given clause <b>A.7</b> of this document.                            |
| NA.2.25 Fatigue Load Model 3                                              | Define the conditions of application for two vehicles in the same lane.                                                                                                                                                              | SDS 4.1.9 or 4.7                            |                                                                                |
| Table NA.5 Set of equivalent lorries for Fatigue Load Model 4             | Define specific vehicle axle arrangements.                                                                                                                                                                                           | SDS 4.1.9                                   |                                                                                |
| NA.2.31 Collision forces on structural members                            | Define nominal vehicle collision forces on structural members.                                                                                                                                                                       | SDS 4.1.7                                   |                                                                                |
| NA.2.32 Actions on pedestrian parapets                                    | Define the required class of pedestrian parapet.                                                                                                                                                                                     | SDS 3.7                                     |                                                                                |
| NA.2.43 Accidental presence of a heavy vehicle                            | Define alternative load model characteristics.                                                                                                                                                                                       | SDS 4.1.7                                   |                                                                                |
| NA.2.44.1 General (3 <sup>rd</sup> para)                                  | Define any associated requirements such as: <ul style="list-style-type: none"> <li>• mass gathering (for example marathons, demonstrations);</li> <li>• deliberate pedestrian synchronization;</li> <li>• vandal loading.</li> </ul> | SDS 4.1.5                                   |                                                                                |
| NA.2.44.2 Dynamic actions to be considered (2)                            | Define crowd loading densities.                                                                                                                                                                                                      | SDS 4.1.5                                   |                                                                                |
| NA.2.44.2 Dynamic actions to be considered (3)                            | Define whether jogging cases can be neglected.                                                                                                                                                                                       | SDS 4.1.5                                   |                                                                                |
| NA.2.44.5 Steady state modelling of pedestrians in crowded Conditions (3) | Define alternative appropriate dynamic models.                                                                                                                                                                                       | SDS 4.1.5                                   |                                                                                |
| NA.2.44.6 Recommended serviceability limits for use in design (1)         | Define exposure factor $k_4$ .                                                                                                                                                                                                       | SDS 5.1                                     |                                                                                |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                                                                | Choices and Options                                                                                                                                                                           | Where recorded if applicable to the project | Comment |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------|
| NA.2.44.6 Recommended serviceability limits for use in design (2)                                                                          | Define exposure factor $k_4$ .                                                                                                                                                                | SDS 5.1                                     |         |
| NA.2.44.6 Recommended serviceability limits for use in design (3)                                                                          | Define relaxation of the design limits.                                                                                                                                                       | SDS 5.1                                     |         |
| Tables NA.9 to NA.11 Recommended values for the structure height factor $k_3$                                                              | Define values of $k_1$ , $k_2$ and $k_3$ .                                                                                                                                                    | SDS 5.1                                     |         |
| NA to BS EN 1992-1-1:2004 UK National Annex to Eurocode 2: Design of concrete structures – Part 1-1: General rules and rules for buildings |                                                                                                                                                                                               |                                             |         |
| Table NA.1 – UK decisions for Nationally Determined Parameters described in BS EN 1992-1-1:2004 Sub clause 9.8.3 (2)                       | Minimum downward load for tie beams – To be determined for each individual project.                                                                                                           | Designer record                             |         |
| BS EN 1992-2:2005 Eurocode 2: Design of concrete structures – Part 2: Concrete bridges – Design and detailing rules                        |                                                                                                                                                                                               |                                             |         |
| 5.7 (105)<br>Non-linear analysis                                                                                                           | Details of method for non-linear analysis and safety format.                                                                                                                                  | Designer record                             |         |
| 5.8.5<br>Second order effects with axial load (including slender column design)                                                            | <ul style="list-style-type: none"> <li>Non-linear analysis to 5.8.6</li> <li>Method based on moment magnification factor to 5.8.7</li> <li>Method based on nominal curvature 5.8.8</li> </ul> | Designer record                             |         |
| 5.10.6<br>Time dependent losses                                                                                                            | <ul style="list-style-type: none"> <li>Use of 5.10.6</li> <li>Use of Annex D</li> </ul>                                                                                                       | Designer record                             |         |
| 6<br>ULS checks                                                                                                                            | <ul style="list-style-type: none"> <li>Member rules in 6.1 to 6.3</li> <li>Rules in Annex LL</li> <li>Strut and tie rules in 6.5</li> </ul>                                                   | Designer record                             |         |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                                 | Choices and Options                                                                                                                                                                                                                                                                                                                                                                             | Where recorded if applicable to the project | Comment                       |
|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------------------|
| 6.1                                                                                                         | <ul style="list-style-type: none"> <li>6.1/(109)a</li> <li>6.1/(109)b</li> <li>6.1/(109)c</li> </ul>                                                                                                                                                                                                                                                                                            | Designer record                             |                               |
| 6.2.4<br>Longitudinal shear with transverse bending – check of concrete crushing                            | <ul style="list-style-type: none"> <li>Method of 6.2.4/(105)</li> <li>Method of Annex MM</li> </ul>                                                                                                                                                                                                                                                                                             | Designer record                             |                               |
| 6.8.7<br>Concrete Fatigue                                                                                   | <ul style="list-style-type: none"> <li>Equivalent damage (6.8.7(1))</li> <li>Static verification (6.8.7(2))</li> </ul>                                                                                                                                                                                                                                                                          | Designer record                             |                               |
| Annex KK                                                                                                    | <ul style="list-style-type: none"> <li>General method (KK.3)</li> <li>Incremental (KK.4)</li> <li>Linear viscoelasticity methods (KK.5)</li> <li>Ageing coefficient (KK.6)</li> </ul>                                                                                                                                                                                                           | Designer record                             |                               |
| PD6687-2:2008 Recommendations for the design of structures to BS EN 1992-2:2005                             |                                                                                                                                                                                                                                                                                                                                                                                                 |                                             |                               |
| 6.5 Plastic Analysis BS EN 1992-1-1:2004 Clause 5.6                                                         | BS EN 1992-2:2005, 5.6.1 (101)P allows the use of plastic analysis when permitted by National Authorities. Permission for the use of plastic analysis should therefore be sought from the relevant body on a project-specific basis, see 2.1 of this Standard. Typically this will be part of the technical approval process.                                                                   | Designer record                             |                               |
| 12 Additional rules for external prestressing                                                               | The following additional rules are recommended for the design of structures with external prestressing. The need for their application should be determined on a project-specific basis.                                                                                                                                                                                                        | Designer record                             | See Annex B of this document. |
| BS EN 1993-1-1:2005 Eurocode 3: Design of steel structures – Part 1-1 General rules and rules for buildings |                                                                                                                                                                                                                                                                                                                                                                                                 |                                             |                               |
| 5.2.2(3)<br>Treatment of second order effects and imperfections                                             | <ul style="list-style-type: none"> <li>both totally by global analysis</li> <li>partially by global analysis and partially through individual stability checks of members according to 6.3</li> <li>for basic cases by individual stability checks of equivalent members according to 6.3 using appropriate buckling lengths according to the global buckling mode of the structure.</li> </ul> | Designer record                             |                               |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                       | Choices and Options                                                                                                                                                                               | Where recorded if applicable to the project | Comment                                                                        |
|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------|
| 5.3.2<br>Imperfections for analysis                                                               | <ul style="list-style-type: none"> <li>5.3.2(3) – combination of local bow and global sway imperfections</li> <li>5.3.2(11) – unique imperfection from shape of critical buckling mode</li> </ul> | Designer record                             |                                                                                |
| 7.1 (3) Serviceability limit states, General                                                      | Any serviceability limit state and the associated loading and analysis model should be specified for a project.                                                                                   | Designer record                             |                                                                                |
| BS EN 1993-1-5:2006 Eurocode 3: Design of steel structures – Part 1-5: Plated structural elements |                                                                                                                                                                                                   |                                             |                                                                                |
| 2.3 or 2.4<br>Stress calculation                                                                  | <ul style="list-style-type: none"> <li>Use effective width models (2.3)</li> <li>Use reduced stress method (2.4)</li> </ul>                                                                       | Designer record                             |                                                                                |
| 3.3(1)<br>Calculation of shear lag effective widths at ULS                                        | <ul style="list-style-type: none"> <li>elastic calculation</li> <li>combined shear lag and plate buckling</li> <li>elastic-plastic calculation</li> </ul>                                         | Designer record                             |                                                                                |
| 4.4(2)<br>Effective cross-section for outstand compression elements                               | <ul style="list-style-type: none"> <li>Use <math>k\sigma</math> from Table 4.1 or Table 4.2</li> <li>Determine <math>k\sigma</math> from more accurate calculation</li> </ul>                     | Designer record                             |                                                                                |
| 4.4(4), (5)<br>Class 4 section design buckling resistance                                         | <ul style="list-style-type: none"> <li>Use plate slenderness <math>\lambda_p</math></li> <li>Use second order analysis as appropriate and slenderness <math>\lambda_{p,red}</math></li> </ul>     | Designer record                             |                                                                                |
| 9.2.1(8)<br>Torsional buckling of stiffeners                                                      | <ul style="list-style-type: none"> <li>Criterion given by equation (9.3)</li> <li>More advanced method</li> </ul>                                                                                 | Designer record                             | Information to be recorded only if recommended values or methods are not used. |
| 9.2.1(9)<br>Torsional buckling of stiffeners                                                      | <ul style="list-style-type: none"> <li>Criterion given by equation (9.4)</li> <li>More advanced method</li> </ul>                                                                                 | Designer record                             | Information to be recorded only if recommended values or methods are not used. |
| 10(5)<br>Reduction factor $\rho$                                                                  | <ul style="list-style-type: none"> <li>Use of equation (10.4)</li> <li>Use of equation (10.5)</li> </ul>                                                                                          | Designer record                             |                                                                                |
| A.1(2)<br>Buckling coefficient $k_{\sigma,p}$                                                     | <ul style="list-style-type: none"> <li>Use of application rules supplied</li> <li>Use of first principles</li> </ul>                                                                              | Designer record                             |                                                                                |



## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                                                 | Choices and Options                                                                                                                                                                              | Where recorded if applicable to the project | Comment                                                                        |
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| C.2(1)<br>Use of FE analysis                                                                                                | Project Specification to give conditions for use of FEM                                                                                                                                          | SDS                                         |                                                                                |
| C.5(2)<br>Use of imperfections                                                                                              | <ul style="list-style-type: none"> <li>Equivalent geometric imperfections</li> <li>More refined analysis</li> </ul>                                                                              | Designer record                             | Information to be recorded only if recommended values or methods are not used. |
| C.6(2)<br>Non-linear analysis of plates to EC3-1-5 Annex C – stress-strain curve                                            | <ul style="list-style-type: none"> <li>Use of 3-1-5/C.6(2) curve a)</li> <li>Use of 3-1-5/C.6(2) curve b)</li> <li>Use of 3-1-5/C.6(2) curve c)</li> <li>Use of 3-1-5/C.6(2) curve d)</li> </ul> | Designer record                             |                                                                                |
| C.8<br>Limit state criteria                                                                                                 | <ul style="list-style-type: none"> <li>Criteria given in C.8(1)</li> <li>Other criteria: e.g. attainment of the yielding criterion</li> </ul>                                                    | Designer record                             |                                                                                |
| E.1(1)<br>Effective areas for the ultimate limit state                                                                      | <ul style="list-style-type: none"> <li>Method in 4.4(2) and 4.4(4)</li> <li>Method in E.1</li> </ul>                                                                                             | Designer record                             |                                                                                |
| NA to BS EN 1993-1-5:2006 UK National Annex to Eurocode 3: Design of steel structures – Part 1-5 Plated structural elements |                                                                                                                                                                                                  |                                             |                                                                                |
| NA.2.11 - BS EN 1993-1-5:2006, C.2(1)                                                                                       | Conditions for the use of FEM analysis in design should be specified for the particular project.                                                                                                 | Designer record                             |                                                                                |
| BS EN 1993-1-8:2005 Eurocode 3: Design of steel structures – Part 1-8: Design of joints                                     |                                                                                                                                                                                                  |                                             |                                                                                |
| 2.4(2)<br>Calculation of resistance of joints                                                                               | <ul style="list-style-type: none"> <li>Use of linear elastic calculation</li> <li>Use of elastic-plastic calculation</li> </ul>                                                                  | Designer record                             |                                                                                |
| Table 6.2<br>Calculation of prying forces                                                                                   | <ul style="list-style-type: none"> <li>Method 1</li> <li>Method 2</li> </ul>                                                                                                                     | Designer record                             |                                                                                |
| BS EN 1993-1-9:2005 Eurocode 3: Design of steel structures – Part 1-9: Fatigue                                              |                                                                                                                                                                                                  |                                             |                                                                                |
| 6.4(1)<br>Design value of modified nominal stress range                                                                     | <ul style="list-style-type: none"> <li>Determine according to equation (6.3)</li> <li>More accurate calculation</li> </ul>                                                                       | Designer record                             |                                                                                |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                                                  | Choices and Options                                                                                                                                              | Where recorded if applicable to the project | Comment |
|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------|
| A.3<br>Cycle counting: Stress histories evaluation                                                                           | <ul style="list-style-type: none"> <li>Rainflow method</li> <li>Reservoir method</li> <li>Stress ranges &amp; number of cycles</li> <li>Mean stresses</li> </ul> | Designer record                             |         |
| NA to BS EN 1993-1-9:2005 UK National Annex to Eurocode 3: Design of steel structures – Part 1-9 Fatigue                     |                                                                                                                                                                  |                                             |         |
| NA.2.10 Fatigue strength categories not covered by Tables 8.1 to 8.10 or Annex B BS EN 1993-1-9:2005, Clause 7.1 (5)         | Fatigue strength categories for details not covered by BS EN 1993-1-9 should be given for individual projects.                                                   | Designer record                             |         |
| PD6695-1-9:2008 Recommendations for the design of structures to BS EN 1993-1-9                                               |                                                                                                                                                                  |                                             |         |
| 4.2 Test specimens – Determining fatigue strengths from tests BS EN 1993-1-9:2005, 2(4) <sup>2</sup>                         | Any other agreed alternative methods should be specified for the individual projects.                                                                            | Designer record                             |         |
| BS EN 1993-1-10:2005 Eurocode 3: Design of steel structures – Part 1-10: Material toughness and through-thickness properties |                                                                                                                                                                  |                                             |         |
| 2.1(2)<br>Elements not subject to tension, welding or fatigue                                                                | <ul style="list-style-type: none"> <li>Conservative rules in 2</li> <li>Evaluation using fracture mechanism (2.4)</li> </ul>                                     | Designer record                             |         |
| 2.2(3)<br>Methods to determine the toughness requirement                                                                     | <ul style="list-style-type: none"> <li>Fracture mechanics method</li> <li>Numerical evaluation</li> </ul>                                                        | Designer record                             |         |
| BS EN 1993-1-11:2006 Eurocode 3: Design of steel structures – Part 1-11 Design of structures with tension components         |                                                                                                                                                                  |                                             |         |
| 2.2(2) Note<br>Load factors for permanent loads ( <i>G</i> ) and prestress ( <i>P</i> ) (see also cl. 5.3)                   | <ul style="list-style-type: none"> <li>Same load factor applied to entity “<i>G + P</i>”</li> <li>Separate factors applied to <i>G</i> and <i>P</i></li> </ul>   | Designer record                             |         |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                                                                     | Choices and Options                                                                                                                                                                                                  | Where recorded if applicable to the project                                                                    | Comment |
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| 2.3.6(1)<br>Design for cable replacement                                                                                                        | During replacement of tension components, all elements of the structure should satisfy the relevant serviceability and ultimate limit state requirements without any restrictions to traffic or other imposed loads. | Designer record                                                                                                |         |
| 2.3.6(2)<br>Design for cable accidental loss                                                                                                    | Structures should be designed to accommodate the loss of any one hanger at ULS, stay or main cable without any restrictions to traffic or other imposed loads.                                                       | Designer record                                                                                                |         |
| 5.4<br>Global analysis to allow for non-linearities                                                                                             | <ul style="list-style-type: none"> <li>• Cable sag catered for in non-linear analysis</li> <li>• Cable sag accounted for by Ernst equation</li> </ul>                                                                | Designer record                                                                                                |         |
| B(6)<br>Monitoring cables after installation                                                                                                    | Project Specification to specify: <ul style="list-style-type: none"> <li>• Monitoring regime and duration</li> <li>• Replacement procedure</li> </ul>                                                                | SDS 3.8.1                                                                                                      |         |
| NA to BS EN 1993-1-11:2006 UK National Annex to Eurocode 3: Design of steel structures – Part 1-11 Design of structures with tension components |                                                                                                                                                                                                                      |                                                                                                                |         |
| NA.2.1 (1) NOTE Replacement and loss of tension components<br>BS EN 1993-1-11:2006, 2.3.6                                                       | If restrictions to traffic and other imposed loads are considered, the restrictions measures should be detailed in the Project Specification.                                                                        | Record restriction measures in the SDS 3.8.2 if restriction to traffic and other imposed loads are considered. |         |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                                      | Choices and Options                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Where recorded if applicable to the project                                                                                                                                                                                                                                                   | Comment |
|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| NA.2.1 (2) NOTE Replacement and loss of tension components BS EN 1993-1-11:2006, 2.3.6                           | <p>Unless specified otherwise for specific projects, structures should be designed to accommodate the loss of any one hanger, stay without any restrictions to traffic or other imposed loads. The structure should be designed to satisfy all ultimate limit state requirements in the accidental combination, including the dynamic effect of cable removal in NOTE 2 of <b>2.3.6(2)</b>.</p> <p>Where a structure cannot be designed to accommodate the loss of a particular tension component, the Project Specification should specify the protection measures to be adopted to prevent sudden removal of that tension component</p> | <p>Give details in SDS 3.8.1 if structure is not designed to accommodate the loss of any one hanger, stay without any restrictions to traffic or other imposed loads.</p> <p>Specify in the SDS 3.8.1 the protection measures for the prevention of sudden removal of tension components.</p> |         |
| NA.2.3 (1) Note 6 Strengths of steels and wires [BS EN 1993-1-11:2006, 3.1]                                      | At present there is no limit to the maximum value for $f_u$ . However the current ongoing research might find that extra high strength wire is more susceptible to premature failure. Wires of tensile strengths greater than the recommended maximum value should be agreed and specified in the Project Specification.                                                                                                                                                                                                                                                                                                                  | Specify in the SDS 3.9 the tensile strength of wires if it is greater than the recommended maximum in the Project Specification.                                                                                                                                                              |         |
| NA.2.4 Corrosion protection of the exterior of Group B tension components BS EN 1993-1-11:2006, 4.4 – (2) NOTE 1 | The corrosion resistance class for the stainless steel should be specified for the individual projects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Specify in the SDS 3.9 the corrosion resistance class for the stainless steel for the individual project.                                                                                                                                                                                     |         |
| NA.2.7 Persistent design situation during service EN 1993-1-11:2006, 5.3 – (2) NOTE                              | The aforementioned structures are therefore not within the scope of BS EN 1993-1-11:2006, 5.3. If the rules of BS EN 1993-1-11 are applied to such structure types it is suggested that the actions P and G should have partial factors applied to them separately as required in 5.2 (3). In such cases the project specification should give the values of $\gamma_G$ and $\gamma_P$ that are to be used.                                                                                                                                                                                                                               | Specify in the SDS 5.1 the values of $\gamma_G$ and $\gamma_P$ for the individual project.                                                                                                                                                                                                    |         |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                                                                                               | Choices and Options                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Where recorded if applicable to the project                                                                                                                                                                                                                                   | Comment                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| NA.2.13 (1) Note<br>Waterproofing<br>[BS EN 1993-1-11:2006, A.4.5.1]                                                                                                      | The tension components should be tested for water-tightness in accordance with article 11.3 of <i>SETRA Cable Stays</i> [1] unless an alternative test is specified in the Project Specification.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Specify details of any alternative test used in the Project Specification                                                                                                                                                                                                     |                                                                        |
| NA.2.15 (6) Note<br>Annex B – Transport, storage, handling                                                                                                                | Monitoring might be required to confirm that the design assumptions, such as final forces in tension components and vibration of tension components due to wind, rain and traffic, have been met in the completed structure. The Project Specification should specify the required monitoring regime and its duration.<br><br>Details of maintenance procedures should be provided which should include at least:<br>- Procedures for minor and major maintenance operations expected during the design lifetime of the tension components;<br>The replacement procedure for a tension component in accordance with the design assumptions made in the Project Specification. | Specify the required monitoring regime and its duration for tension components in the Project Specification and in the SDS 4.1.8<br><br>Specify the replacement procedure for a tension component in the design assumptions in the Project Specification and in the SDS 3.8.1 |                                                                        |
| NA to BS EN 1993-1-12:2007 UK National Annex to Eurocode 3: Design of steel structures – Part 1-12 Additional rules for the extension of EN 1993 up to steel grades S 700 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                               |                                                                        |
| NA.2.2.1 BS EN 1993-1-12:2007, 2.8 (4.2 (2) NOTE)                                                                                                                         | The required strength class of electrodes should be specified for the individual projects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Record the required strength class of electrodes in the Project Specification                                                                                                                                                                                                 |                                                                        |
| BS EN 1993-2:2006 Eurocode 3: Design of steel structures – Part 2: Steel bridges                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                               |                                                                        |
| 2.1.3.4(1)<br>Components which need to be designed for accidental design situations                                                                                       | Project Specification to specify components which need to be designed for accidental design situations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | SDS 4.1.7                                                                                                                                                                                                                                                                     | Information to be recorded if special components have been identified. |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                          | Choices and Options                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Where recorded if applicable to the project | Comment |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------|
| 3.4(1)<br>Types of cable which are deemed to satisfy the requirements for durability | Project Specification to specify the types of cable which are deemed to satisfy the requirements for durability                                                                                                                                                                                                                                                                                                                                                                            | SDS 3.9                                     |         |
| 5.2.1(4)<br>Global analysis<br>( $\alpha_{crit} \geq 10$ )                           | <ul style="list-style-type: none"> <li>• First order theory</li> <li>• Second order theory</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                      | Designer record                             |         |
| 5.4.1<br>Non-linear analysis of plates to EC3-1-5 Annex C – stress-strain curve      | Plastic global analysis <ul style="list-style-type: none"> <li>• BS EN 1993-1-5 clause C.6(2) curve a)</li> <li>• BS EN 1993-1-5 clause C.6(2) curve b)</li> <li>• BS EN 1993-1-5 clause C.6(2) curve c)</li> <li>• BS EN 1993-1-5 clause C.6(2) curve d)</li> </ul>                                                                                                                                                                                                                       | Designer record                             |         |
| 6.2.8(1)<br>Bending, axial load, shear and transverse loads                          | <ul style="list-style-type: none"> <li>• Interaction methods (6.2.8 to 6.2.10)</li> <li>• Interaction of stresses (6.2.1)</li> </ul>                                                                                                                                                                                                                                                                                                                                                       | Designer record                             |         |
| 6.3.1.5(1)<br>Use of class 3 sect. prop. With stress limits                          | <ul style="list-style-type: none"> <li>• Use class 4 section properties</li> <li>• Use class 3 section properties with stress limit</li> </ul>                                                                                                                                                                                                                                                                                                                                             | Designer record                             |         |
| 6.3.3<br>Members in bending and axial compression                                    | <ul style="list-style-type: none"> <li>• Use of BS EN 1993-2 clause 6.3.3(1)</li> <li>• Use of BS EN 1993-1-1 clause 6.3.3(4) with interaction factors calculated in accordance with Annex A [(5) Note 1 alternative method 1]</li> <li>• Use of BS EN 1993-1-1 clause 6.3.3(4) with interaction factors calculated in accordance with Annex B [(5) Note 1 alternative method 2]</li> <li>• Use of BS EN 1993-1-1 clause 6.3.4</li> <li>• Use of BS EN 1993-2 clause 6.3.4.2(2)</li> </ul> | Designer record                             |         |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                              | Choices and Options                                                                                                                                                                                                                                                                                        | Where recorded if applicable to the project                                                                             | Comment |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|---------|
| 7.11(2)<br>Design of joint details if access is not provided             | <ul style="list-style-type: none"> <li>All parts effectively sealed against corrosion (with corrosion allowance)</li> <li>Use of weathering steel</li> </ul>                                                                                                                                               | Designer record                                                                                                         |         |
| 9.4.1<br>Fatigue stress range                                            | <ul style="list-style-type: none"> <li>Use method of EN 1993-2/9</li> <li>Use stress histories</li> </ul>                                                                                                                                                                                                  | Designer record                                                                                                         |         |
| BS EN 1993-5:2007 Eurocode 3: Design of steel structures – Part 5 Piling |                                                                                                                                                                                                                                                                                                            |                                                                                                                         |         |
| 2.3 (2) Serviceability limit state criteria                              | Values for the limits given in (1), in relation to the combination of actions to be taken into account according to EN 1990, should be defined for each project.                                                                                                                                           | Record the values for the limits in relation to the combination of actions to be taken into account in the SDS 5.1      |         |
| 2.3 (3) Serviceability limit state criteria                              | Where relevant, values for limits imposed by adjacent structures should be defined for the project.                                                                                                                                                                                                        | Only record in the SDS 5.1 if values for limits are to be imposed by adjacent structures.                               |         |
| 4.1 (6) Durability, General                                              | The required design working life for sheet piling and bearing piles should be given for each project.                                                                                                                                                                                                      | Record the design working life in the AIP 3.1                                                                           |         |
| 4.1 (8) Durability, General                                              | Corrosion protection systems should be defined for each project.                                                                                                                                                                                                                                           | Record the corrosion protection systems in the SDS 3.9                                                                  |         |
| 5.5.1 (4)P Combined walls, General                                       | It should be stated for each project and agreed with the client whether driving imperfections need to be considered in the design of the combined wall. The design values of any driving imperfections shall be given as percentages of the length of the primary element, assuming a linear distribution. | Agree and record in the SDS 5.1 whether driving imperfections need to be considered in the design of the combined wall. |         |
| 6.1 (1) Serviceability limit states, Basis                               | The significance of settlements and vibrations, and their limiting values in each case, should be given for the project taking into account local conditions.                                                                                                                                              | Record the significance of settlements and vibrations, and their limiting values in each case in the SDS 5.1            |         |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                                                   | Choices and Options                                                                                                                                                                                                                                                                                                         | Where recorded if applicable to the project                                                                                                  | Comment |
|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------|
| BS EN 1994-2:2005 Eurocode 4: Design of composite steel and concrete structures – Part 2: General rules and rules for bridges |                                                                                                                                                                                                                                                                                                                             |                                                                                                                                              |         |
| 5.3.2(1)<br>Imperfection for bridges                                                                                          | Equivalent geometric imperfections should be used with values that reflect the possible effects of system imperfections and also member imperfections unless these effects are included in the resistance formulae.                                                                                                         | Designer record                                                                                                                              |         |
| 5.4.2.8(4)<br>Determination of internal forces in tension members                                                             | <ul style="list-style-type: none"> <li>• Simplified method in (5)</li> <li>• Method in (6) and (7)</li> <li>• A more accurate method according to (2) and (3).</li> </ul>                                                                                                                                                   | Designer record                                                                                                                              |         |
| NA to BS EN 1997-1:2004 National Annex to Eurocode 7: Geotechnical design – Part 1 General rules                              |                                                                                                                                                                                                                                                                                                                             |                                                                                                                                              |         |
| NA.3.4 BS EN 1997-1:2004 Annex H                                                                                              | The limiting values of structural deformation and foundation movement relate primarily to building. Limiting values of structural deformation and foundation movement for other civil engineering works should be determined for the project and agreed, where appropriate, with the client and other relevant authorities. | Agree and record the limiting values of structural deformation and foundation movement in the SDS 6.3                                        |         |
| A.2.1 Partial factors on actions                                                                                              | Actions listed in BS EN 1997-1:2004, 2.4.2 for which no values are set in BS EN 1991 may be specified for a particular project. The values of these actions and their partial factors and combination factors should be agreed with the client and relevant authorities.                                                    | Agree and record in the SDS 4.1.9 or 4.7 values of actions, partial factors and combination factors for actions for which no values are set. |         |
| A3.1 Partial factors on actions or the effect of actions                                                                      | Actions listed in BS EN 1997-1:2004, 2.4.2 for which no values are set in BS EN 1991 may be specified for a particular project. The values of these actions and their partial factors and combination factors might need to be agreed with the client and relevant authorities.                                             | Agree and record in the SDS 4.1.9 or 4.7 values of actions, partial factors and combination factors for actions for which no values are set. |         |



## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                                           | Choices and Options                                                                                                                                                                                   | Where recorded if applicable to the project                                                                                                                                                         | Comment                                                                        |
|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| NA to BS EN 1998-2:2005 National Annex to Eurocode 8: Design of structures for earthquake resistance – Part 2 Bridges |                                                                                                                                                                                                       |                                                                                                                                                                                                     |                                                                                |
| Table NA.1<br>Ref. 2.1(3)P of BS EN 1998-2<br>Design seismic action                                                   | Reference return period $T_{NCR}$ of seismic action for the no-collapse requirement may be specified for an individual project. See also 8.2 of PD 6698:2009.                                         | Record in the SDS 4.1.9 reference return period determined from the site-specific hazard analysis.                                                                                                  | Information to be recorded only if recommended values or methods are not used. |
| Table NA.1<br>Ref. 2.1(4)P of BS EN 1998-2<br>Design seismic action                                                   | The importance classes should be established for an individual project. For class 3 structures, the need for the design to consider earthquake resistance may be specified for an individual project. | Record in the SDS 4.1.9 the consequence class and the importance class of the structure. For bridges in consequence class 3, record whether earthquake resistance will be considered in the design. | Advice is given in Table A.6 of this document.                                 |
| Table NA.1<br>Ref. 2.1(6) of BS EN 1998-2<br>Design seismic action                                                    | Where $T_{NCR}$ has been assessed on a project-specific basis, $\gamma_I$ should also be chosen on a project-specific basis.                                                                          | Record in the SDS 4.1.9 the value of $\gamma_I$ used.                                                                                                                                               | Information to be recorded only if recommended values or methods are not used. |
| Table NA.1<br>Ref. 4.1.2(4)P of BS EN 1998-2<br>Analysis – Modelling - Masses                                         | The value of $\psi_{2,1}$ for traffic loads assumed concurrent with the design seismic action may be specified for an individual project.                                                             | Record in SDS 4.1.9 values of $\psi_{2,1}$ used.                                                                                                                                                    | Information to be recorded only if recommended values or methods are not used. |
| Table NA.1<br>Ref. 6.6.2.3(3) of BS EN 1998-2<br>Bearings – Elastomeric bearings                                      | Extent of damage to elastomeric bearings may be specified for an individual project, but see 8.8 of PD 6698:2009.                                                                                     | Record in the SDS 4.1.9 extent of damage to elastomeric bearings allowed.                                                                                                                           | Information to be recorded only if recommended values or methods are not used. |
| Table NA.1<br>Ref. 6.7.3(7) of BS EN 1998-2<br>Abutments rigidly connected to the deck                                | Value of $d_{im}$ may be specified for an individual project.                                                                                                                                         | Record in the SDS 4.1.9 value of $d_{im}$ used.                                                                                                                                                     | Information to be recorded only if recommended values or methods are not used. |

## Part 2 Specific Requirements

| Document and Clause for Choices and Options                                                 | Choices and Options                                                                                                                                                                                              | Where recorded if applicable to the project                                | Comment |
|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------|
| Table NA.1<br>Ref. 7.4.1(1)P of BS EN 1998-2<br>Seismic action – Design spectra             | Value of control period $T_D$ for the design spectrum of bridges with seismic isolation may be specified for an individual project, if a site-specific hazard analysis is carried out. See 8.10 of PD 6698:2009. | Record in the Designer record value of $T_D$ used.                         |         |
| Table NA.1<br>Ref. 7.7.1(2) of BS EN 1998-2<br>Lateral restoring capability                 | Values of $\delta_w$ and $\delta_d$ may be specified for an individual project.                                                                                                                                  | Record in the Design Certificate values of $\delta_w$ and $\delta_d$ used. |         |
| Table NA.1<br>Ref. J.1(2) of BS EN 1998-2<br>Factors causing variation of design properties | Value of annual probability used in the calculation of $T_{min}$ and $T_{max}$ may be specified for an individual project. See 8.13 of PD 6698:2009.                                                             | Record in the Designer record value of annual probability specified.       |         |

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**APPENDIX K2 - STRUCTURES DESIGN STATEMENT  
(EXISTING STRUCTURES ASSESSMENT)**

**THIS IS APPENDIX K2 TO THE NEW WORKS REQUIREMENTS**

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**1 ROAD DETAILS****1.1** Type of road**1.2** Permitted traffic speed <sup>2</sup>**1.3** Existing restrictions <sup>3</sup>**2 SITE DETAILS****2.1** Obstacle crossed**3 PROPOSED STRUCTURE****3.1** Description of Structure**3.2** Structural type**3.3** Foundation type**3.4** Span arrangements**3.5** Articulation arrangements**3.6** Road restraint systems requirements**3.7** Proposed arrangements for Inspection for Assessment**3.7.1** Traffic management

Part 2 Specific Requirements

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3.7.2 Arrangements for future maintenance and inspection of structure.  
Access arrangements to structure.

3.7.3 Intrusive or further investigations proposed

**3.8** Environment and sustainability

**3.9** Durability. Materials strengths assumed and basis of assumptions <sup>4</sup>

**3.10** Risks and hazards considered for design, execution, maintenance and demolition  
Consultation with and/or agreement from CDM co-ordinator <sup>5</sup>

**3.11** Year of construction

**3.12** Reason for assessment

**3.13** Part of Structure to be assessed

**4 ASSESSMENT CRITERIA**

**4.1** Actions

4.1.1 Permanent actions

4.1.2 Snow, Wind and Thermal actions

4.1.3 Actions relating to normal traffic under AW regulations and C&U  
regulations <sup>6</sup>

4.1.4 Actions relating to General Order traffic under STGO regulations <sup>7</sup>

## Part 2 Specific Requirements

## 4.1.5 Footway or footbridge variable actions

4.1.6 Actions relating to Special Order traffic, provision for exceptional abnormal indivisible loads including location of vehicle track on deck cross-section<sup>8</sup>

## 4.1.7 Accidental actions

## 4.1.8 Actions during execution

4.1.9 Any special actions not covered above<sup>9</sup>4.2 Heavy or high load route requirements and arrangements being made to preserve the route, including any provisions for future heavier loads or future widening<sup>10</sup>

## 4.3 Minimum headroom provided

## 4.4 Authorities consulted and any special conditions required

## 4.5 Standards and documents listed in the Technical Approval Schedule

Refer to Annex A

## 4.6 Proposed Departures from standards given in 4.5

## 4.7 Proposed Departures relating to methods for dealing with aspects not covered by standards in 4.5

**5 STRUCTURAL ANALYSIS**5.1 Methods of analysis proposed for superstructure, substructure and foundations<sup>11, 12</sup>



## Part 2 Specific Requirements

**5.2** Description and diagram of idealised Structure to be used for analysis

**5.3** Assumptions intended for calculation of structural element stiffness

**5.4** Proposed range of soil parameters to be used in the assessment of earth retaining elements <sup>13</sup>

## **6 GEOTECHNICAL CONDITIONS**

**6.1** Acceptance of recommendations of the Geotechnical Design Report to be used in the assessment and reasons for any proposed changes

**6.2** Summary of design for highway Structure in the Geotechnical Design Report

**6.3** Differential settlement to be allowed for in the assessment of the Structure

**6.4** If the Geotechnical Design Report is not yet available, state when the results are expected and list the sources of information used to justify the preliminary choice of foundations <sup>14</sup>

## **7 CHECKING**

**7.1** Proposed Category

**7.2** Name of proposed Category 3 Checker

**8 DRAWINGS AND DOCUMENTS**

**8.1** List of drawings (including numbers) and documents accompanying the submission <sup>15</sup>

ANNEX A - Technical Standards Schedule <sup>16</sup>

ANNEX B - Diagram of idealised structural analysis model

ANNEX C - Departures from Standards

ANNEX D - Drawings

**9 THE ABOVE ACCURATELY REFLECTS THE ASSUMPTIONS USED FOR ASSESSMENT OF THIS STRUCTURE**

Signed \_\_\_\_\_

Name \_\_\_\_\_

Design Team Leader

Engineering Qualifications \_\_\_\_\_ <sup>17</sup>

Name of Organisation \_\_\_\_\_

Date \_\_\_\_\_

Part 2 Specific Requirements

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**Notes**

- 1 *Delete as appropriate.*
- 2 *For a bridge, give over and/or under.*
- 3 *Include weight, height, width and any environmental restrictions at or adjacent to the bridge.*
- 4 *Give material strengths from record drawings or intrusive investigation. For all material strengths given, list the relevant codes/standards.*
- 5 *List only risks and hazards that would not be apparent to an experienced and competent Contractor or are likely to require special attention to manage them effectively. Where possible and practicable, the identified potential risks and hazards shall be eliminated or minimised during the design stage. Designers shall name the CDM co-ordinator and confirm that the CDM co-ordinator has reviewed the risks and hazards identified in the AIP and is satisfied.*
- 6 *e.g. HA Loading*
- 7 *e.g. HB or SV loading*
- 8 *e.g. Individual vehicle which includes the following information as applicable:*
  - a) *Gross weight of the vehicle in tonnes and vehicle type and number;*
  - b) *Axle load and spacing (longitudinally and transversely);*
  - c) *Air cushion in tonnes over area applied in m x m; and*
  - d) *Single or twin tyres and wheel contact areas.*
- 9 *e.g. seismic action, atmospheric icing, floating debris etc.*
- 10 *The heavy or high load route requirements should be confirmed with Transport Scotland.*
- 11 *List the main structural elements for superstructure, substructure and foundation.*
- 12 *Factors of Safety are required where limit state design codes are not used.*
- 13 *For assessment of existing Structures, where no such geotechnical information is available, suggested earth pressure coefficient values given in relevant DMRB parts should be used instead.*
- 14 *When the Geotechnical Design Report becomes available, an addendum to the SDS, covering section 6, must be submitted to the Contracting Authority. The addendum must have its own sections 8 and 9 to provide a list of drawings, documents and signatures.*
- 15 *Where appropriate, also include:*
  - a) *Relevant extracts from the Geotechnical Design Report;*
  - b) *Methods of dealing with aspects not covered by Standards; and*
  - c) *Relevant correspondence and documents from consultations.*
- 16 *The relevant Assessment Standards are given in the Design Manual for Roads and Bridges (DMRB).*
- 17 *CEng, MICE, MStructE or equivalent.*

## **STRUCTURES DESIGN STATEMENT**

### **ANNEX A**

#### **Technical Standards Schedule for Assessment**

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## Part 2 Specific Requirements

It is the responsibility of the compiler of the Structures Design Statement and/or the assessment or check certificate compiler to ensure that the Standards, references and clauses used - including amendments and corrigenda are relevant and current at the Base Date.

Documents in *italics* are under preparation at the time of publication of this document.

All Standards and Documents not used shall be struck through.

### Schedule of Documents Relating to Assessment of Highway Bridges and Structures

| British Standards        |                                                                                                                                            |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| BS 4449:2005 + A2:2009   | Steel for the reinforcement of concrete – Weldable reinforcing steel – Bar, coil and decoiled product – Specification                      |
| BS 4483:2005             | Steel fabric for the reinforcement of concrete – Specification                                                                             |
| BS 5896:2012             | High tensile steel wire and strand for the prestressing of concrete – Specification                                                        |
| BS 6779-4:1999           | Highway parapets for bridges and other structures – Part 4: Specification for parapets of reinforced and unreinforced masonry construction |
| BS 7818:1995             | Specification for pedestrian restraint systems in metal                                                                                    |
| BS 8006-1:2010           | Code of practice for strengthened / reinforced soils and other fills                                                                       |
| BS 8500-1:2006 + A1:2012 | Concrete – Complementary British Standard to BS EN 206-1 Part 1: Method of specifying and guidance for the specifier                       |
| BS 8666:2005             | Scheduling, dimensioning, bending and cutting of steel reinforcement for concrete – Specification                                          |
| BS EN 10025-1:2004       | Hot rolled products of structural steels – Part 1: General technical delivery conditions                                                   |
| BS EN 10025-2:2004       | Hot rolled products of structural steels – Part 2: Technical delivery conditions for non-alloy structural steels                           |

### The Manual of Contract Documents for Highway Works (MCHW)

Volume 1: Specification for Highway Works

Volume 2: Notes for Guidance on the Specification for Highway Works

Volume 3: Highway Construction Details

### Design Manual for Roads and Bridges (DMRB)

General Requirements, Standards (GD Series)

GD 01 Introduction to the Design Manual for Roads and Bridges

GD 02 Quality Management Systems for Highway Design

## Part 2 Specific Requirements

| <b>Design Manual for Roads and Bridges (DMRB)</b><br>Bridges and Structures, Advice Notes (BA Series) |                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| BA 9/81                                                                                               | The Use of BS 5400 Part 10: 1980 - Code of Practice for Fatigue [Incorporating Amendment No.1 dated November 1983]                           |
| BA 16/97                                                                                              | The Assessment of Highway Bridges and Structures [Incorporating Amendment No. 1 dated November 1997 and Amendment No. 2 dated November 2001] |
| BA 19/85                                                                                              | The Use of BS 5400: Part 3: 1982                                                                                                             |
| BA 24/87                                                                                              | Early Thermal Cracking of Concrete [Incorporating Amendment No.1 dated August 1989]                                                          |
| BA 26/94                                                                                              | Expansion Joints for Use in Highway Bridge Decks                                                                                             |
| BA 28/92                                                                                              | Evaluation of Maintenance Costs in Comparing Alternative Designs for Highway Structures                                                      |
| BA 30/94                                                                                              | Strengthening of Concrete Highway Structures Using Externally Bonded Plates                                                                  |
| BA 36/90                                                                                              | The Use of Permanent Formwork                                                                                                                |
| BA 37/92                                                                                              | Priority Ranking of Existing Parapets                                                                                                        |
| BA 38/93                                                                                              | Assessment of the Fatigue Life of Corroded or Damaged Reinforcement Bars                                                                     |
| BA 39/93                                                                                              | Assessment of Reinforced Concrete Half-joints                                                                                                |
| BA 40/93                                                                                              | Tack Welding of Reinforcing Bars                                                                                                             |
| BA 41/98                                                                                              | The Design and Appearance of Bridges                                                                                                         |
| BA 42/96                                                                                              | The Design of Integral Bridges [Incorporating Amendment No. 1 dated May 2003]                                                                |
| BA 43/94                                                                                              | Strengthening, Repair and Monitoring of Post-tensioned Concrete Bridge Decks                                                                 |
| BA 44/96                                                                                              | The Assessment of Concrete Highway Bridges and Structures                                                                                    |
| BA 47/99                                                                                              | Waterproofing and Surfacing of Concrete Bridge Decks                                                                                         |
| BA 50/93                                                                                              | Post-tensioned Concrete Bridges. Planning, Organisation and Methods for Carrying Out Special Inspections                                     |
| BA 51/95                                                                                              | The Assessment of Concrete Structures Affected by Steel Corrosion                                                                            |
| BA 52/94                                                                                              | The Assessment of Concrete Structures Affected by Alkali Silica Reaction                                                                     |
| BA 53/94                                                                                              | Bracing Systems and the Use of U-Frames in Steel Highway Bridges                                                                             |
| BA 54/94                                                                                              | Load Testing for Bridge Assessment                                                                                                           |
| BA 55/06                                                                                              | The Assessment of Bridge Substructures and Foundations, Retaining Walls and Buried Structures                                                |
| BA 57/01                                                                                              | Design for Durability                                                                                                                        |

## Part 2 Specific Requirements

**Design Manual for Roads and Bridges (DMRB)****Bridges and Structures, Advice Notes (BA Series)**

|          |                                                                                     |
|----------|-------------------------------------------------------------------------------------|
| BA 59/94 | Design of Highway bridges for Hydraulic Action                                      |
| BA 67/96 | Enclosure of Bridges                                                                |
| BA 68/97 | Crib Retaining Walls                                                                |
| BA 72/03 | Maintenance of Road Tunnels                                                         |
| BA 80/99 | Use of Rock Bolts                                                                   |
| BA 82/00 | Formation of Continuity Joints in Bridge Decks                                      |
| BA 83/02 | Cathodic Protection for Use in Reinforced Concrete Highway Structures               |
| BA 84/02 | Use of Stainless Steel Reinforcement in Highway Structures                          |
| BA 85/04 | Coatings for Concrete Highway Structures & Ancillary Structures                     |
| BA 86/06 | Advice Notes on the Non-Destructive Testing of Highway Structures                   |
| BA 87/04 | Management of Corrugated Steel Buried Structures<br>[Incorporating Correction No 2] |
| BA 88/04 | Management of Buried Concrete Box Structures                                        |
| BA 92/07 | The use of Recycled Concrete Aggregates in Structural Concrete                      |
| BA 93/09 | Structural Assessment of Bridges with Hinge Decks                                   |

**Design Manual for Roads and Bridges (DMRB)****Bridges and Structures, Standards (BD Series)**

|          |                                                                                                                 |
|----------|-----------------------------------------------------------------------------------------------------------------|
| BD 7/01  | Weathering Steel for Highway Structures                                                                         |
| BD 9/81  | Implementation of BS 5400: Part 10: 1980 - Code of Practice for Fatigue                                         |
| BD 10/97 | Design of Highway Structures in Areas of Mining Subsidence                                                      |
| BD 12/01 | Design of Corrugated Steel Buried Structures with Spans greater than 0.9 metres and up to 8.0 metres            |
| BD 13/06 | Design of Steel Bridges. Use of BS 5400: Part 3: 2000                                                           |
| BD 15/92 | General Principles for the Design and Construction of Bridges. Use of BS 5400: Part 1:1988                      |
| BD 16/82 | Design of Composite Bridges. Use of BS 5400: Part 5: 1979<br>[Incorporating Amendment No.1 dated December 1987] |
| BD 20/92 | Bridge Bearings. Use of BS 5400: Part 9: 1983                                                                   |
| BD 21/01 | The Assessment of Highway Bridges and Structures                                                                |
| BD 24/92 | The Design of Concrete Highway Bridges and Structures. Use of BS 5400: Part 4: 1990                             |
| BD 28/87 | Early Thermal Cracking of Concrete<br>[Incorporating Amendment No.1 dated August 1989]                          |



## Part 2 Specific Requirements

| <b>Design Manual for Roads and Bridges (DMRB)</b>    |                                                                                                                                                                     |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Bridges and Structures, Standards (BD Series)</b> |                                                                                                                                                                     |
| BD 29/04                                             | Design Criteria for Footbridges                                                                                                                                     |
| BD 30/87                                             | Backfilled Retaining Walls and Bridge Abutments                                                                                                                     |
| BD 31/01                                             | The Design of Buried Concrete Box and Portal Frame Structures                                                                                                       |
| BD 33/94                                             | Expansion Joints for Use in Highway Bridge Decks                                                                                                                    |
| BD 35/06                                             | Quality Assurance Scheme for Paints and Similar Protective Coatings                                                                                                 |
| BD 36/92                                             | Evaluation of Maintenance Costs in Comparing Alternative Designs for Highway Structures                                                                             |
| BD 37/01                                             | Loads for Highway Bridges                                                                                                                                           |
| BD 41/97                                             | Reinforced clay brickwork retaining walls of pocket type and grouted cavity type construction – use of BS 5628:Part 2:1995                                          |
| BD 42/00                                             | Design of Embedded Retaining Walls and Bridge Abutments                                                                                                             |
| BD 43/03                                             | The Impregnation of Reinforced and Prestressed Concrete Highway Structures using Hydrophobic Pore-Lining Impregnants                                                |
| BD 44/95                                             | The Assessment of Concrete Highway Bridges and Structures                                                                                                           |
| BD 47/99                                             | Waterproofing and Surfacing of Concrete Bridge Decks                                                                                                                |
| BD 48/93                                             | The Assessment and Strengthening of Highway Bridge Supports                                                                                                         |
| BD 49/01                                             | Design Rules for Aerodynamic Effects on Bridges                                                                                                                     |
| BD 51/98                                             | Portal and Cantilever Sign/Signal Gantries                                                                                                                          |
| BD 53/95                                             | Inspection & Records for Road Tunnels                                                                                                                               |
| BD 54/93                                             | Post-tensioned Concrete Bridges. Prioritisation of Special Inspections                                                                                              |
| BD 56/10                                             | The Assessment of Steel Highway Bridges and Structures                                                                                                              |
| BD 57/01                                             | Design for Durability                                                                                                                                               |
| BD 58/94                                             | Design of Bridges and Concrete Structures with External and Unbonded Prestressing                                                                                   |
| BD 60/04                                             | Design of Highway Bridges for Vehicle Collision Loads                                                                                                               |
| BD 61/10                                             | The Assessment of Composite Highway Bridges and Structures                                                                                                          |
| BD 62/07                                             | As Built, Operational and Maintenance Records for Highway Structures                                                                                                |
| BD 63/07                                             | Inspection of Highway Structures                                                                                                                                    |
| BD 65/97                                             | Design Criteria for Collision Protection Beams                                                                                                                      |
| BD 67/96                                             | Enclosure of Bridges                                                                                                                                                |
| BD 68/97                                             | Crib Retaining Walls                                                                                                                                                |
| BD 70/03                                             | Strengthened/Reinforced Soils and other Fills for Retaining Walls and Bridge Abutments Use of BS 8006: 1995<br>[Incorporating Amendment No. 1 (Issue 2 March 1999)] |
| BD 74/00                                             | Foundations                                                                                                                                                         |
| BD 78/99                                             | Design of Road Tunnels                                                                                                                                              |
| BD 79/06                                             | The Management of Sub-Standard Highway Structures<br>[Incorporating Amendment No. 1 dated August 2001]                                                              |

## Part 2 Specific Requirements

| <b>Design Manual for Roads and Bridges (DMRB)</b><br>Bridges and Structures, Standards (BD Series) |                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BD 81/02                                                                                           | Use of Compressive Membrane Action in Bridge Decks [Incorporating Correction No. 2 dated May 2007]                                                                                                                                                               |
| BD 82/00                                                                                           | Design of Buried Rigid Pipes                                                                                                                                                                                                                                     |
| BD 84/02                                                                                           | Strengthening of Concrete Bridge Supports for Vehicle Impact Using Fibre Reinforced Polymers                                                                                                                                                                     |
| BD 85/08                                                                                           | Strengthening Highway Bridges using Externally Bonded Fibre Reinforced Polymer                                                                                                                                                                                   |
| BD 86/11                                                                                           | The Assessment of Highway Bridges & Structures For The Effects of Special Types General Order (STGO) and Special Order (SO) Vehicles                                                                                                                             |
| BD 87/05                                                                                           | Maintenance Painting of Steelwork                                                                                                                                                                                                                                |
| BD 89/03                                                                                           | The Conservation of Highway Structures<br>[English Addendum applicable for use in England<br>Northern Ireland Addendum applicable for use in Northern Ireland<br>Scottish Addendum applicable for use in Scotland<br>Welsh Addendum applicable for use in Wales] |
| BD 90/05                                                                                           | Design of FRP Bridges and Highway Structures                                                                                                                                                                                                                     |
| BD 91/04                                                                                           | Unreinforced Masonry Arch Bridges                                                                                                                                                                                                                                |
| BD 94/07                                                                                           | Design of Minor Structures                                                                                                                                                                                                                                       |
| BD 95/07                                                                                           | Treatment of Existing Structures on Highway Widening Schemes                                                                                                                                                                                                     |
| BD 97/12                                                                                           | The Assessment of Scour and other Hydraulic Actions at Highway Bridges                                                                                                                                                                                           |
| BD 101/11                                                                                          | Structural Review and Assessment of Highway Structures                                                                                                                                                                                                           |

| <b>Design Manual for Roads and Bridges (DMRB)</b><br>Traffic Engineering and Control, Standards and Advice Notes (TD and TA Series) |                                        |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| TD 9/93                                                                                                                             | Highway Link Design                    |
| TD 19/06                                                                                                                            | Requirement for Road Restraint Systems |
| TD 27/05                                                                                                                            | Cross Sections and Headroom            |

| <b>Design Manual for Roads and Bridges (DMRB)</b><br>Highways, Advice Notes (HA Series) |                                                 |
|-----------------------------------------------------------------------------------------|-------------------------------------------------|
| HA 66/95                                                                                | Environmental Barriers – Technical Requirements |

| <b>Design Manual for Roads and Bridges (DMRB)</b><br>Highways, Standards (HD Series) |                                     |
|--------------------------------------------------------------------------------------|-------------------------------------|
| HD 22/08                                                                             | Managing Geotechnical Risk          |
| HD 45/09                                                                             | Road Drainage and Water Environment |

Part 2 Specific Requirements

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**Transport Scotland Interim Amendments**

|          |                                                                                                           |
|----------|-----------------------------------------------------------------------------------------------------------|
| TS IA 25 | Transport Scotland Interim Amendment No 25: Assessment and upgrading of existing vehicle parapets         |
| TS IA 26 | Transport Scotland Interim Amendment No 26: The Anchorage of Reinforcement & Fixings in Hardened Concrete |

## **STRUCTURES DESIGN STATEMENT**

### **ANNEX B**

**Diagram of idealised structural analysis model**

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## **STRUCTURES DESIGN STATEMENT**

### **ANNEX C**

#### **Departures from Standard**

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## **STRUCTURES DESIGN STATEMENT**

### **ANNEX D**

#### **Drawings**



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**APPENDIX L -  
REINFORCED SOIL DIMENSIONAL TOLERANCES  
AND DEFORMATION LIMITS**

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## APPENDIX L

## REINFORCED SOIL DIMENSIONAL TOLERANCES AND DEFORMATION LIMITS

REINFORCED SOIL STRUCTURES - DESIGN VALUES OF CONSTRUCTION  
MOVEMENT TOLERANCES TO BE EQUALLED OR BETTERED**Tolerances for faces of retaining walls and abutments**

| Location of plane of Structure | Tolerance $\pm$ 50 mm                |
|--------------------------------|--------------------------------------|
| Verticality                    | $\pm$ 5 mm per metre height          |
| Bulging (vertical)             | $\pm$ 20 mm in 4.5 m template        |
| Bowing (horizontal)            | $\pm$ 20 mm in 4.5 m template        |
| Steps at Joints                | $\pm$ 10 mm                          |
| Alignment along top            | $\pm$ 15 mm from reference alignment |

**Serviceability limits on post construction internal strains for bridge abutments and retaining walls**

| Structure        | Strain (percent) |
|------------------|------------------|
| Bridge Abutments | 0.5              |
| Walls            | 1.0              |

**Minimum vertical movement capacities required for facing system to cope with vertical internal settlement of reinforced fill**

| Structure form  | Minimum vertical movement capacity                 |
|-----------------|----------------------------------------------------|
| Discrete Panels | Joint closure of 1 in 150 relative to panel height |

The Designer shall state the Design Values used in the Structure Design Statement for each reinforced soil structure.

**Methodology for Measuring Tolerances**

The Designer shall define the methodology to be used in the Structure Design Statement for each reinforced soil structure.

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**APPENDIX M – NOT USED**

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**APPENDIX N -  
REQUIREMENTS FOR PRIVATE WATER SUPPLIES (PWS)**

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## Part 2 Specific Requirements

**Screening**

A number of PWS have been recorded in the proximity of the New Works. The known PWS have been screened and assessed to consider the potential impact of the New Works on these PWS. The phases of assessments were:

- (i) Phase 1: Initial screening in the Environmental Statement (Jacobs, 2007);
- (ii) Phase 2: PWS Field Survey Reports (Jacobs, 2007/08) reporting on PWS survey phase and updating Environmental Statement screening on PWS identified at risk in Phase 1;
- (iii) Phase 3: PWS Assessment Programme Hydrogeological Reports (Jacobs, 2012) undertaken on PWS identified at risk in Phase 2; and
- (iv) Phase 4: PWS Monitoring Documents (Jacobs, 2013) for monitoring undertaken 12 months prior to construction of New Works.

A summary of the PWS assessments undertaken and mitigation identified at each individual PWS are provided in Table 1 below. The Company shall update Table 1 as appropriate to include the outcomes of an updated screening of their Design. The updated Table 1 shall form the basis of the mitigation measures to be implemented and is subject to approval by the Contracting Authority.

The Company shall be responsible for undertaking the PWS Mitigation outlined in Table 1 at each PWS as a minimum and shall take into account the above referenced documents in the design of PWS which will or may be impacted by the New Works.

PWS have been assigned an identification code that shall be adopted by the Company.

**Guidance**

The Company shall comply with published guidelines, including but not limited to those contained within the following documents:

- SEPA Regulatory Method (WAT-RM-11) Licensing groundwater abstractions including dewatering - v3 June 2010
- SEPA Regulatory Method (WAT-RM-26) Determination of Aquifer Properties - V2 Oct 2009
- SEPA Regulatory Method (WAT-RM-16) Hydrogeologist Input to groundwater abstraction assessment - V3 June 2012
- SEPA Regulatory Method (WAT-RM-24) Pumping test methodology - V3 June 2010
- SEPA Regulatory Method (WAT-RM-27) Modelling methods for groundwater abstractions - V2 Oct 2009
- SEPA An applicant guide to water supply - V1 May 2010

## Part 2 Specific Requirements

Table 1 - Summary of PWS Assessments and Mitigation Requirements by the Company

| Private Water Supply ID Code | Summary of PWS Assessments                                                                                                 |                                                                                                         |                                                                                                        | Mitigation Requirements                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | Phase 2: PWS Field Survey Reports (Jacobs, 2007/08 issued)                                                                 | Phase 3: PWS Assessment Programme – Hydrogeological Report (Jacobs, 2012)                               | Phase 4: Proposed PWS Monitoring Document (Jacobs, 2013)                                               | PWS Mitigation by the Company                                                                                                                                                                                                                                                                                                                                                           |
| <b>Northern Leg</b>          |                                                                                                                            |                                                                                                         |                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                         |
| N1                           | AWPR Private Water Supplies Field Survey N1 Howemoss Farm Land Ref. 61                                                     | N/A                                                                                                     | N/A                                                                                                    | Road drainage lining proposed along Standingstone Wood shall be extended from chainage 318800m to chainage 319300m. Diversion of PWS pipelines required through underpass that also provides Shell pipeline protection and the PWS system shall be revised to maintain supply.<br>Construction of a PWS tank required within landowner boundary to replace tank N1 located in CPO area. |
| N2                           | AWPR Private Water Supplies Field Survey N2-N3, Corsehill Farm, Chapel of Stoneywood and Newton Farm Land Ref. 065 and 066 | N/A                                                                                                     | N/A                                                                                                    | Road drainage lining along Chapel of Stoneywood shall be extended to ch317650-31. Care should be taken with existing PWS pipeline networks and protecting their integrity.                                                                                                                                                                                                              |
| N3                           | AWPR Private Water Supplies Field Survey N2-N3, Corsehill Farm, Chapel of Stoneywood and Newton Farm Land Ref. 065 and 066 | N/A                                                                                                     | N/A                                                                                                    | Maintenance of field drain networks required.                                                                                                                                                                                                                                                                                                                                           |
| N4                           | AWPR Private Water Supplies Field Survey N4, Leuchlands Croft Land Ref. 012                                                | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS N4-N14 | N/A                                                                                                    | Connection to mains required, which is being undertaken by others in advance of the New Works.                                                                                                                                                                                                                                                                                          |
| N5                           | Aberdeen Western Peripheral Route N5, Goval Farm Land Ref. 058                                                             | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS N5     | Hydrogeological and Hydrological Site Specific Specification of Monitoring of Private Water Supply N5b | Potential monitoring during construction to continue should the PWS be confirmed to be active. If a permanent impact is recorded, no further action is required as the farm is already connected to mains.                                                                                                                                                                              |
| N6                           | AWPR Private Water Supplies Field Survey N6-N7, Aryburn – Parkhill                                                         | N/A                                                                                                     | N/A                                                                                                    | Refer to archaeological mitigation measures on classified part of historical                                                                                                                                                                                                                                                                                                            |

## Part 2 Specific Requirements

| Private Water Supply ID Code | Summary of PWS Assessments                                                                                                   |                                                                                                                     |                                                                                                         | Mitigation Requirements                                                                                                                                                                       |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | Phase 2: PWS Field Survey Reports (Jacobs, 2007/08 issued)                                                                   | Phase 3: PWS Assessment Programme – Hydrogeological Report (Jacobs, 2012)                                           | Phase 4: Proposed PWS Monitoring Document (Jacobs, 2013)                                                | PWS Mitigation by the Company                                                                                                                                                                 |
|                              | House – Home Farm – Parkhill Sawmill Land Ref. 597 and 31                                                                    |                                                                                                                     |                                                                                                         | network.                                                                                                                                                                                      |
| N7                           | AWPR Private Water Supplies Field Survey N6-N7, Aryburn – Parkhill House – Home Farm – Parkhill Sawmill Land Ref. 597 and 31 | N/A                                                                                                                 | N/A                                                                                                     | N/A                                                                                                                                                                                           |
| N8                           | AWPR Private Water Supplies Field Survey N8, Standingstones Land Ref. 56                                                     | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS N8                 | N/A                                                                                                     | Mains connection required for Standingstones Farm (both domestic and livestock supply in its entirety) which is being undertaken by others in advance of the New Works.                       |
| N9                           | AWPR Private Water Supplies Field Survey N9, Pitmedden Home Farm Land Ref. 59                                                | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS N9 and N22         | Hydrogeological and Hydrological Site Specific Specification of Monitoring of Private Water Supply N9   | Attempt replacement and if unsuccessful need to connect to mains (domestic and livestock water for 5 properties). Additional N9c tank noted appears to be not active.                         |
| N10                          | N/A - PWS abandoned as per ES 2007                                                                                           | N/A                                                                                                                 | N/A                                                                                                     | N/A                                                                                                                                                                                           |
| N11                          | AWPR Private Water Supplies Field Survey N11, Newton Farm Land ref. 116                                                      | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment of PWS S52, S53, S54, S55, S65 and N11b | Hydrogeological and Hydrological Site Specific Specification of Monitoring of Private Water Supply N11b | Attempt replacement and if unsuccessful need to connect to mains for livestock supply.                                                                                                        |
| N12                          | AWPR Private Water Supplies Field Survey N12, Rowett Research Institute Land Ref. 292                                        | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment of PWS N12                              | N/A                                                                                                     | Troughs intercepted by the Scheme; however landowners have agreed to undertake trough replacement. No additional mitigation measures required.                                                |
| N13                          | AWPR Private Water Supplies Field Survey N13, Hillhead farm Land Ref. 350                                                    | N/A                                                                                                                 | N/A                                                                                                     | Company to determine any required mitigation which as a minimum shall involve liaison with the PWS owner in relation to performance of the existing PWS during construction of the New Works. |
| N14                          | AWPR Private Water Supplies Field Survey N14, Newton of Shielhill Land Ref. 005                                              | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS N4-N14             | N/A                                                                                                     | Connection to mains required for domestic supply at Newton of Shielhill which is being undertaken by others in advance of New Works.                                                          |

## Part 2 Specific Requirements

| Private Water Supply ID Code | Summary of PWS Assessments                                                     |                                                                                                                                  |                                                                                                        | Mitigation Requirements                                                                                                                                                                                                                                                                                                     |
|------------------------------|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | Phase 2: PWS Field Survey Reports (Jacobs, 2007/08 issued)                     | Phase 3: PWS Assessment Programme – Hydrogeological Report (Jacobs, 2012)                                                        | Phase 4: Proposed PWS Monitoring Document (Jacobs, 2013)                                               | PWS Mitigation by the Company                                                                                                                                                                                                                                                                                               |
| N15                          | AWPR Private Water Supplies Field Survey N15, Birchville Land Ref. 20          | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS N15, N17, N21 (a, b, c) and N24 | N/A - property on mains already                                                                        | N/A                                                                                                                                                                                                                                                                                                                         |
| N16                          | N/A - PWS abandoned as per ES 2007                                             | N/A                                                                                                                              | N/A                                                                                                    | N/A                                                                                                                                                                                                                                                                                                                         |
| N17                          | AWPR Private Water Supplies Field Survey N17, Stanedykes Land Ref. 24          | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS N15, N17, N21 (a, b, c) and N24 | N/A - property on mains already                                                                        | N/A                                                                                                                                                                                                                                                                                                                         |
| N18                          | AWPR Private Water Supplies Field Survey N18, Kepplestone Farm Land Ref. 100   | N/A                                                                                                                              | N/A                                                                                                    | Land drainage networks linking spring to troughs to be maintained.                                                                                                                                                                                                                                                          |
| N19                          | N/A - PWS abandoned as per ES 2007                                             | N/A                                                                                                                              | N/A                                                                                                    | N/A                                                                                                                                                                                                                                                                                                                         |
| N20                          | N/A - PWS abandoned as per ES 2007                                             | N/A                                                                                                                              | N/A                                                                                                    | N/A                                                                                                                                                                                                                                                                                                                         |
| N21                          | AWPR Private Water Supplies Field Survey N21, Corsehill Cottage Land Ref. 29   | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS N15, N17, N21 (a, b, c) and N24 | Hydrogeological and Hydrological Site Specific Specification of Monitoring of Private Water Supply N21 | Attempt replacement and if unsuccessful need to connect to mains for domestic supply to Meadowbank associated with N21c.<br>Continue monitoring at N21a and N21b, and if a permanent impact is recorded, replacement attempt should be undertaken for domestic supply to Meadowhead and livestock supply connected to N21c. |
| N22                          | AWPR Private Water Supplies Field Survey N22, Upper Kirkton Land Ref. 53-55-56 | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS N9 and N22                      | Hydrogeological and Hydrological Site Specific Specification of Monitoring of Private Water Supply N22 | Attempt replacement and if unsuccessful need to connect to mains livestock supply and part of the domestic supply for Upper Kirkton.                                                                                                                                                                                        |
| N23                          | AWPR Private Water Supplies Field Survey N23 Land Ref. 283                     | N/A - PWS abandoned based on letter report information                                                                           | N/A                                                                                                    | N/A                                                                                                                                                                                                                                                                                                                         |

## Part 2 Specific Requirements

| Private Water Supply ID Code | Summary of PWS Assessments                                                |                                                                                                                                  |                                                               | Mitigation Requirements                                                                                                                                                                       |
|------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | Phase 2: PWS Field Survey Reports (Jacobs, 2007/08 issued)                | Phase 3: PWS Assessment Programme – Hydrogeological Report (Jacobs, 2012)                                                        | Phase 4: Proposed PWS Monitoring Document (Jacobs, 2013)      | PWS Mitigation by the Company                                                                                                                                                                 |
| N24                          | AWPR Private Water Supplies Field Survey N24, Red Moss Land Ref. 764      | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS N15, N17, N21 (a, b, c) and N24 | N/A - garden use only and property already connected to mains | N/A                                                                                                                                                                                           |
| N25                          | N/A - identified at PLI stage and land owner was moving onto mains supply | N/A                                                                                                                              | N/A                                                           | Company to determine any required mitigation which as a minimum shall involve liaison with the PWS owner in relation to performance of the existing PWS during construction of the New Works  |
| N26                          | N/A - abandoned supply identified at late stage (2010)                    | N/A                                                                                                                              | N/A                                                           | N/A                                                                                                                                                                                           |
| N27                          | N/A - supply identified during ACC 2012/3 consultation                    | N/A                                                                                                                              | N/A                                                           | Connection to mains required for domestic supply at Waulkmill Croft which is being undertaken by others in advance of the New Works.                                                          |
| N28                          | N/A - supply identified during ACC 2012/3 consultation                    | N/A                                                                                                                              | N/A - PWS is not assessed as being at risk                    | N/A                                                                                                                                                                                           |
| N29                          | N/A - supply identified during ACC 2012/3 consultation                    | N/A                                                                                                                              | N/A                                                           | Company to determine any required mitigation which as a minimum shall involve liaison with the PWS owner in relation to performance of the existing PWS during construction of the New Works. |
| N30                          | N/A - supply identified during ACC 2012/3 consultation                    | N/A                                                                                                                              | N/A                                                           | Company to determine any required mitigation which as a minimum shall involve liaison with the PWS owner in relation to performance of the existing PWS during construction of the New Works. |
| <b>Southern Leg</b>          |                                                                           |                                                                                                                                  |                                                               |                                                                                                                                                                                               |
| S1                           | N/A - distant supply not considered at risk                               | N/A                                                                                                                              | N/A                                                           | N/A                                                                                                                                                                                           |

## Part 2 Specific Requirements

| Private Water Supply ID Code | Summary of PWS Assessments                                                                                                                        |                                                                                                     |                                                                                                       | Mitigation Requirements                                                                                               |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
|                              | Phase 2: PWS Field Survey Reports (Jacobs, 2007/08 issued)                                                                                        | Phase 3: PWS Assessment Programme – Hydrogeological Report (Jacobs, 2012)                           | Phase 4: Proposed PWS Monitoring Document (Jacobs, 2013)                                              | PWS Mitigation by the Company                                                                                         |
| S2                           | N/A - only 1 PWS identified in land ownership & is at S4 location                                                                                 | N/A                                                                                                 | N/A                                                                                                   | N/A                                                                                                                   |
| S3                           | N/A - only 1 PWS identified in land ownership & is at S4 location                                                                                 | N/A                                                                                                 | N/A                                                                                                   | N/A                                                                                                                   |
| S4                           | AWPR Private Water Supplies Field Survey S4, Bishopston Farm Land Ref. 1736                                                                       | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS S4 | Hydrogeological and Hydrological Site Specific Specification of Monitoring of Private Water Supply S4 | Monitoring during construction to continue and if a permanent impact is recorded, replacement attempt should be made. |
| S5                           | N/A - distant supply not considered at risk                                                                                                       | N/A                                                                                                 | N/A                                                                                                   | N/A                                                                                                                   |
| S6                           | AWPR Private Water Supplies Field Survey S6-S7-S8-S9-S60, Greenloaning, Ferniebrae, Merchant Croft and Mains of Patenlaws Land Ref. 228a and 228c | N/A - PWS abandoned                                                                                 | N/A                                                                                                   | N/A                                                                                                                   |
| S7                           | AWPR Private Water Supplies Field Survey S6-S7-S8-S9-S60, Greenloaning, Ferniebrae, Merchant Croft and Mains of Patenlaws Land Ref. 228a and 228c | N/A - PWS abandoned                                                                                 | N/A                                                                                                   | N/A                                                                                                                   |
| S8                           | AWPR Private Water Supplies Field Survey S6-S7-S8-S9-S60, Greenloaning, Ferniebrae, Merchant Croft and Mains of Patenlaws Land Ref. 228a and 228c | N/A - distant supply not considered at risk                                                         | N/A                                                                                                   | N/A                                                                                                                   |
| S9                           | AWPR Private Water Supplies Field Survey S6-S7-S8-S9-S60, Greenloaning, Ferniebrae, Merchant Croft and Mains of Patenlaws Land Ref. 228a and 228c | N/A - PWS abandoned                                                                                 | N/A                                                                                                   | N/A                                                                                                                   |
| S10                          | N/A - PWS abandoned as per ES 2007                                                                                                                | N/A                                                                                                 | N/A                                                                                                   | N/A                                                                                                                   |
| S11                          | AWPR Private Water Supplies Field Survey S11, Eastland cottage Land                                                                               | AWPR Private Water Supply Assessment Programme -                                                    | Hydrogeological and Hydrological Site Specific Specification of Monitoring of                         | Monitoring during construction to continue, and if permanent impact                                                   |

## Part 2 Specific Requirements

| Private Water Supply ID Code | Summary of PWS Assessments                                 |                                                                           |                                                          | Mitigation Requirements                                                                                                                                                                                                                                                                                                                 |
|------------------------------|------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | Phase 2: PWS Field Survey Reports (Jacobs, 2007/08 issued) | Phase 3: PWS Assessment Programme – Hydrogeological Report (Jacobs, 2012) | Phase 4: Proposed PWS Monitoring Document (Jacobs, 2013) | PWS Mitigation by the Company                                                                                                                                                                                                                                                                                                           |
|                              | Ref. 556                                                   | Hydrogeological Assessment of PWS S11                                     | Private Water Supply S11                                 | recorded, PWS replacement attempts will be made for domestic supply at Eastland and Kingcausie House & troughs connected to the network. Diversion of pipelines intercepted by proposed embankment is required through structure PS14 Kingcausie/Eastland Access Road Underpass and the PWS system shall be revised to maintain supply. |
| S12                          | N/A - distant supply not considered at risk                | N/A                                                                       | N/A                                                      | N/A                                                                                                                                                                                                                                                                                                                                     |
| S13                          | N/A - distant supply not considered at risk                | N/A                                                                       | N/A                                                      | N/A                                                                                                                                                                                                                                                                                                                                     |
| S14                          | N/A - distant supply not considered at risk                | N/A                                                                       | N/A                                                      | N/A                                                                                                                                                                                                                                                                                                                                     |
| S15                          | N/A - distant supply not considered at risk                | N/A                                                                       | N/A                                                      | N/A                                                                                                                                                                                                                                                                                                                                     |
| S16                          | N/A - distant supply not considered at risk                | N/A                                                                       | N/A                                                      | N/A                                                                                                                                                                                                                                                                                                                                     |
| S17                          | N/A - distant supply not considered at risk                | N/A                                                                       | N/A                                                      | N/A                                                                                                                                                                                                                                                                                                                                     |
| S18                          | N/A - only S11 & S63 are active PWS in this land ownership | N/A                                                                       | N/A                                                      | N/A                                                                                                                                                                                                                                                                                                                                     |
| S19                          | N/A - only S11 & S63 are active PWS in this land ownership | N/A                                                                       | N/A                                                      | N/A                                                                                                                                                                                                                                                                                                                                     |
| S20                          | N/A - distant supply not considered at risk                | N/A                                                                       | N/A                                                      | N/A                                                                                                                                                                                                                                                                                                                                     |
| S21                          | N/A - only S11 & S63 are active PWS in this land ownership | N/A                                                                       | N/A                                                      | N/A                                                                                                                                                                                                                                                                                                                                     |
| S22                          | N/A - distant supply not considered at risk                | N/A                                                                       | N/A                                                      | N/A                                                                                                                                                                                                                                                                                                                                     |
| S23                          | N/A - distant supply not considered at risk                | N/A                                                                       | N/A                                                      | N/A                                                                                                                                                                                                                                                                                                                                     |
| S24                          | N/A - distant supply not considered at risk                | N/A                                                                       | N/A                                                      | N/A                                                                                                                                                                                                                                                                                                                                     |



## Part 2 Specific Requirements

| Private Water Supply ID Code | Summary of PWS Assessments                                                      |                                                                                                                            |                                                              | Mitigation Requirements       |
|------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-------------------------------|
|                              | Phase 2: PWS Field Survey Reports (Jacobs, 2007/08 issued)                      | Phase 3: PWS Assessment Programme – Hydrogeological Report (Jacobs, 2012)                                                  | Phase 4: Proposed PWS Monitoring Document (Jacobs, 2013)     | PWS Mitigation by the Company |
| S25                          | N/A - distant supply not considered at risk                                     | N/A                                                                                                                        | N/A                                                          | N/A                           |
| S26                          | N/A - distant supply not considered at risk                                     | N/A                                                                                                                        | N/A                                                          | N/A                           |
| S27                          | N/A - distant supply not considered at risk                                     | N/A                                                                                                                        | N/A                                                          | N/A                           |
| S28                          | N/A - PWS abandoned as per ES 2007                                              | N/A                                                                                                                        | N/A                                                          | N/A                           |
| S29                          | N/A - distant supply not considered at risk                                     | N/A                                                                                                                        | N/A                                                          | N/A                           |
| S30                          | N/A - distant supply not considered at risk                                     | N/A                                                                                                                        | N/A                                                          | N/A                           |
| S31                          | N/A - distant supply not considered at risk                                     | N/A                                                                                                                        | N/A                                                          | N/A                           |
| S32                          | N/A - distant supply not considered at risk                                     | N/A                                                                                                                        | N/A                                                          | N/A                           |
| S33                          | N/A - distant supply not considered at risk                                     | N/A                                                                                                                        | N/A                                                          | N/A                           |
| S34                          | N/A - distant supply not considered at risk                                     | N/A                                                                                                                        | N/A                                                          | N/A                           |
| S35                          | Aberdeen Western Peripheral Route S35 East Brotherfield Farm Land Ref. 561      | N/A                                                                                                                        | N/A                                                          | N/A                           |
| S36                          | N/A - distant supply not considered at risk                                     | N/A                                                                                                                        | N/A                                                          | N/A                           |
| S37                          | Aberdeen Western Peripheral Route S37 Silverburn Farm Land Ref. 610             | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment of PWS S51, S49, S45, S44-46, S39, S38 and S37 | N/A - Silverburn Farm uses only mains supply                 | N/A                           |
| S38                          | AWPR Private Water Supplies Field Survey S38 East Silverburn Land Ref. 565, 566 | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment of PWS S51, S49, S45, S44-46, S39, S38 and S37 | N/A - PWS no longer used from 2012 as now connected to mains | N/A                           |

## Part 2 Specific Requirements

| Private Water Supply ID Code | Summary of PWS Assessments                                                                                                        |                                                                                                                            |                                                                                                            | Mitigation Requirements                                                                                                                                                                                                                                                                              |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | Phase 2: PWS Field Survey Reports (Jacobs, 2007/08 issued)                                                                        | Phase 3: PWS Assessment Programme – Hydrogeological Report (Jacobs, 2012)                                                  | Phase 4: Proposed PWS Monitoring Document (Jacobs, 2013)                                                   | PWS Mitigation by the Company                                                                                                                                                                                                                                                                        |
| S39                          | AWPR Private Water Supplies Field Survey S39, Gairnlea Land Ref. 566                                                              | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment of PWS S51, S49, S45, S44-46, S39, S38 and S37 | N/A - PWS no longer used from 2012 as bought by the scheme                                                 | N/A                                                                                                                                                                                                                                                                                                  |
| S40                          | AWPR Private Water Supplies Field Survey S40, Broomwood Land Ref. 5171                                                            | N/A                                                                                                                        | Hydrogeological and Hydrological Site Specific Specification of Monitoring of Private Water Supply S40     | Monitoring during construction to continue - if permanent impact recorded, replacement shall be attempted.                                                                                                                                                                                           |
| S41                          | N/A - only 1 PWS identified in land ownership & is at S39 location                                                                | N/A                                                                                                                        | N/A                                                                                                        | N/A                                                                                                                                                                                                                                                                                                  |
| S42                          | N/A - PWS abandoned as per ES 2007                                                                                                | N/A                                                                                                                        | N/A                                                                                                        | N/A                                                                                                                                                                                                                                                                                                  |
| S43                          | N/A - distant supply not considered at risk                                                                                       | N/A                                                                                                                        | N/A                                                                                                        | N/A                                                                                                                                                                                                                                                                                                  |
| S44                          | AWPR Private Water Supplies Field Survey S44 & S46, Invermoriston - Craiglug – Aonachrigh - Brackendale Land Ref. 481-483-484-485 | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment of PWS S51, S49, S45, S44-46, S39, S38 and S37 | Hydrogeological and Hydrological Site Specific Specification of Monitoring of Private Water Supply S44-S46 | Attempt replacement in each impacted land reference and if unsuccessful need to connect to mains for livestock and domestic supply all connected properties.                                                                                                                                         |
| S45                          | N/A - site access was refused by land owner                                                                                       | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment of PWS S51, S49, S45, S44-46, S39, S38 and S37 | Hydrogeological and Hydrological Site Specific Specification of Monitoring of Private Water Supply S45     | Monitoring during construction to continue, and if permanent impact recorded, property will need connection to mains for domestic supply. Land owner queried about vibration effect on his pump during blasting activities - land owner also requested that laboratory test results be communicated. |
| S46                          | AWPR Private Water Supplies Field Survey S44 & S46, Invermoriston - Craiglug – Aonachrigh - Brackendale Land Ref. 481-483-484-485 | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment of PWS S51, S49, S45, S44-46, S39, S38 and S37 | Hydrogeological and Hydrological Site Specific Specification of Monitoring of Private Water Supply S44-S46 | Attempt replacement in each impacted land reference and if unsuccessful need to connect to mains for livestock and domestic supply all connected properties.                                                                                                                                         |
| S47                          | N/A - post ES consultation indicated there is no longer any PWS                                                                   | N/A                                                                                                                        | N/A                                                                                                        | N/A                                                                                                                                                                                                                                                                                                  |
| S48                          | AWPR Private Water Supplies Field                                                                                                 | N/A                                                                                                                        | N/A                                                                                                        | N/A                                                                                                                                                                                                                                                                                                  |

## Part 2 Specific Requirements

| Private Water Supply ID Code | Summary of PWS Assessments                                                                                                    |                                                                                                                            |                                                                                                         | Mitigation Requirements                                                                                                                                                                                                                         |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | Phase 2: PWS Field Survey Reports (Jacobs, 2007/08 issued)                                                                    | Phase 3: PWS Assessment Programme – Hydrogeological Report (Jacobs, 2012)                                                  | Phase 4: Proposed PWS Monitoring Document (Jacobs, 2013)                                                | PWS Mitigation by the Company                                                                                                                                                                                                                   |
|                              | Survey S48-S49, Auchlea Farm and Gairnhill farm Land Ref. 486-477-478                                                         |                                                                                                                            |                                                                                                         |                                                                                                                                                                                                                                                 |
| S49                          | AWPR Private Water Supplies Field Survey S48-S49, Auchlea Farm and Gairnhill Farm Land Ref. 486-477-478                       | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment of PWS S51, S49, S45, S44-46, S39, S38 and S37 | Hydrogeological and Hydrological Site Specific Specification of Monitoring of Private Water Supply S49a | Currently vacant property, Gairn Farm, under new ownership. Monitoring during construction to continue unless new landowners move to mains. If a permanent impact is recorded, PWS replacement to be attempted for Gairn Farm domestic supply.  |
| S50                          | N/A - distant supply not considered at risk                                                                                   | N/A                                                                                                                        | N/A                                                                                                     | N/A                                                                                                                                                                                                                                             |
| S51                          | AWPR Private Water Supplies Field Survey S51, Backhill Farm Land Ref. 473                                                     | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment of PWS S51, S49, S45, S44-46, S39, S38 and S37 | Hydrogeological and Hydrological Site Specific Specification of Monitoring of Private Water Supply S51  | Attempt replacement and if unsuccessful need to connect to mains for the southern part of the network. Monitoring on the source to continue during construction, and if a permanent impact is recorded replacement attempt shall be undertaken. |
| S52                          | AWPR Private Water Supplies Field Survey S52-S53-S54-S55-S65, Derbeth Farm, Fairley Home and Fairley Farm House Land Ref. 103 | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment of PWS S52, S53, S54, S55, S65 and N11b        | N/A - PWS not currently in use                                                                          | N/A                                                                                                                                                                                                                                             |
| S53                          | AWPR Private Water Supplies Field Survey S52-S53-S54-S55-S65, Derbeth Farm, Fairley Home and Fairley Farm House Land Ref. 103 | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment of PWS S52, S53, S54, S55, S65 and N11b        | N/A - not currently used for drinking purpose with property connected to mains already                  | N/A                                                                                                                                                                                                                                             |
| S54                          | AWPR Private Water Supplies Field Survey S52-S53-S54-S55-S65, Derbeth Farm, Fairley Home and Fairley Farm House Land Ref. 103 | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment of PWS S52, S53, S54, S55, S65 and N11b        | N/A                                                                                                     | Connection to mains required for domestic and non domestic to include troughs located to the east of the scheme, which is being undertaken by others in advance of the New Works.                                                               |
| S55                          | AWPR Private Water Supplies Field Survey S52-S53-S54-S55-S65, Derbeth Farm, Fairley Home and Fairley Farm House Land Ref. 103 | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment of PWS S52, S53, S54, S55, S65 and N11b        | N/A                                                                                                     | Connection to mains required for main steading of Derbeth Farm, an adjoining steading, the house adjacent to Derbeth farmhouse and troughs connected to this network, which is being undertaken                                                 |

## Part 2 Specific Requirements

| Private Water Supply ID Code | Summary of PWS Assessments                                                                                                                        |                                                                                                                 |                                                                                                        | Mitigation Requirements                                                                                                                                                                                                      |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | Phase 2: PWS Field Survey Reports (Jacobs, 2007/08 issued)                                                                                        | Phase 3: PWS Assessment Programme – Hydrogeological Report (Jacobs, 2012)                                       | Phase 4: Proposed PWS Monitoring Document (Jacobs, 2013)                                               | PWS Mitigation by the Company                                                                                                                                                                                                |
|                              |                                                                                                                                                   |                                                                                                                 |                                                                                                        | by others in advance of the New Works.                                                                                                                                                                                       |
| S56                          | AWPR Private Water Supplies Field Survey S56, International School of Aberdeen Land Ref. 5006-438                                                 | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS S64, S66 & S56 | Hydrogeological and Hydrological Site Specific Specification of Monitoring of Private Water Supply S56 | Mains connection works being undertaken by others in advance of the New Works.                                                                                                                                               |
| S57                          | AWPR Private Water Supplies Field Survey S57, Burnhead Land Ref. 634                                                                              | N/A                                                                                                             | N/A                                                                                                    | N/A                                                                                                                                                                                                                          |
| S58                          | AWPR Private Water Supplies Field Survey S58, Boyne Villa Land Ref. 322                                                                           | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS S58            | Hydrogeological and Hydrological Site Specific Specification of Monitoring of Private Water Supply S58 | Monitoring during construction to continue provided the PWS is still actively used for drinking purpose. If confirmed and a permanent impact is recorded, no further action is required as the property is already on mains. |
| S59                          | AWPR Private Water Supplies Field Survey S59, Hare Moss Land Ref. 209                                                                             | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS S59            | Hydrogeological and Hydrological Site Specific Specification of Monitoring of Private Water Supply S59 | Existing mains connection shall be extended for livestock supply at steading of Duffhill Farm.                                                                                                                               |
| S60                          | AWPR Private Water Supplies Field Survey S6-S7-S8-S9-S60, Greenloaning, Ferniebrae, Merchant Croft and Mains of Patenlaws Land Ref. 228a and 228c | N/A                                                                                                             | N/A                                                                                                    | N/A                                                                                                                                                                                                                          |
| S61                          | N/A - only 1 PWS identified in land ownership & is at S51 location                                                                                | N/A                                                                                                             | N/A                                                                                                    | N/A                                                                                                                                                                                                                          |
| S62                          | N/A - only 2 PWS identified in land ownership & is at S11/S63 location                                                                            | N/A                                                                                                             | N/A                                                                                                    | N/A                                                                                                                                                                                                                          |
| S63                          | AWPR Private Water Supplies Field Survey S63, Philips Cottage Land ref. 556                                                                       | N/A                                                                                                             | N/A - now PWS abandoned                                                                                | N/A                                                                                                                                                                                                                          |
| S64                          | Aberdeen Western Peripheral Route – B1033200 S64, Edgehill Cottage Land Ref. 754                                                                  | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS S64, S66 & S56 | N/A                                                                                                    | Connection to mains required for Edgehill Cottage, which is being undertaken by others in advance of New Works.                                                                                                              |
| S65                          | AWPR Private Water Supplies Field Survey S52-S53-S54-S55-S65, Derbeth Farm, Fairley Home and                                                      | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment of PWS                              | N/A                                                                                                    | Connection to mains for Cloghill trough may be needed.                                                                                                                                                                       |

## Part 2 Specific Requirements

| Private Water Supply ID Code | Summary of PWS Assessments                                                                         |                                                                                                                 |                                                                                                        | Mitigation Requirements                                                                                                                                                                                                                  |
|------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | Phase 2: PWS Field Survey Reports (Jacobs, 2007/08 issued)                                         | Phase 3: PWS Assessment Programme – Hydrogeological Report (Jacobs, 2012)                                       | Phase 4: Proposed PWS Monitoring Document (Jacobs, 2013)                                               | PWS Mitigation by the Company                                                                                                                                                                                                            |
|                              | Fairley Farm House Land Ref. 103                                                                   | S52, S53, S54, S55, S65 and N11b                                                                                |                                                                                                        |                                                                                                                                                                                                                                          |
| S66                          | AWPR Private Water Supplies Field Survey S66, Kippie Lodge – Aberdeen Petroleum Club Land Ref. 587 | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS S64, S66 & S56 | Hydrogeological and Hydrological Site Specific Specification of Monitoring of Private Water Supply S66 | Monitoring during construction to continue, and if a permanent impact is recorded replacement attempt shall be undertaken. Road drainage lining proposed along Standingstone Wood should be extended between chainage 103400 and 104000. |
| S67                          | AWPR Private Water Supplies Field Survey S67, Jameston Farm Land Ref. 206                          | N/A                                                                                                             | N/A                                                                                                    | N/A                                                                                                                                                                                                                                      |
| <b>Fastlink</b>              |                                                                                                    |                                                                                                                 |                                                                                                        |                                                                                                                                                                                                                                          |
| F1                           | N/A - distant supply not considered at risk                                                        | N/A                                                                                                             | N/A - property on mains                                                                                | N/A                                                                                                                                                                                                                                      |
| F2                           | AWPR Private Water Supplies Field Survey F2, East Lodge Land Ref. 630                              | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment of PWS F2 and F39                   | Hydrogeological and Hydrological Site Specific Specification of Monitoring of Private Water Supply F2  | Monitoring during construction to continue, if permanent impact recorded replacement attempts shall be undertaken.                                                                                                                       |
| F3                           | N/A - distant supply not considered at risk                                                        | N/A                                                                                                             | N/A                                                                                                    | N/A                                                                                                                                                                                                                                      |
| F4                           | N/A - distant supply not considered at risk                                                        | N/A                                                                                                             | N/A                                                                                                    | N/A                                                                                                                                                                                                                                      |
| F5                           | N/A - distant supply not considered at risk                                                        | N/A                                                                                                             | N/A                                                                                                    | N/A                                                                                                                                                                                                                                      |
| F6                           | N/A - distant supply not considered at risk                                                        | N/A                                                                                                             | N/A                                                                                                    | N/A                                                                                                                                                                                                                                      |
| F7                           | N/A - distant supply not considered at risk                                                        | N/A                                                                                                             | N/A                                                                                                    | N/A                                                                                                                                                                                                                                      |
| F8                           | N/A - distant supply not considered at risk                                                        | N/A                                                                                                             | N/A                                                                                                    | N/A                                                                                                                                                                                                                                      |

## Part 2 Specific Requirements

| Private Water Supply ID Code | Summary of PWS Assessments                                                                                                              |                                                                           |                                                                                                        | Mitigation Requirements                                                                                                                                  |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | Phase 2: PWS Field Survey Reports (Jacobs, 2007/08 issued)                                                                              | Phase 3: PWS Assessment Programme – Hydrogeological Report (Jacobs, 2012) | Phase 4: Proposed PWS Monitoring Document (Jacobs, 2013)                                               | PWS Mitigation by the Company                                                                                                                            |
| F9                           | AWPR Private Water Supplies Field Survey F9-F10-F13-F18-F21, North Cookney – Allochie – Blackbutts Cottage Broomhill Farm Land Ref. 515 | N/A                                                                       | N/A                                                                                                    | N/A                                                                                                                                                      |
| F10                          | AWPR Private Water Supplies Field Survey F9-F10-F13-F18-F21, North Cookney – Allochie – Blackbutts Cottage Broomhill Farm Land Ref. 515 | N/A                                                                       | N/A                                                                                                    | N/A                                                                                                                                                      |
| F11                          | N/A - distant supply not considered at risk                                                                                             | N/A                                                                       | N/A                                                                                                    | N/A                                                                                                                                                      |
| F12                          | N/A - distant supply not considered at risk                                                                                             | N/A                                                                       | N/A                                                                                                    | N/A                                                                                                                                                      |
| F13                          | AWPR Private Water Supplies Field Survey F9-F10-F13-F18-F21, North Cookney – Allochie – Blackbutts Cottage Broomhill Farm Land Ref. 515 | N/A                                                                       | N/A                                                                                                    | N/A                                                                                                                                                      |
| F14                          | AWPR Private Water Supplies Field Survey F14, Elrick Farm Land Ref. 520                                                                 | N/A                                                                       | Hydrogeological and Hydrological Site Specific Specification of Monitoring of Private Water Supply F14 | Monitoring during construction to continue, if permanent impact recorded replacement attempts shall be undertaken for domestic supply at Elrick Cottage. |
| F15                          | N/A - distant supply not considered at risk                                                                                             | N/A                                                                       | N/A                                                                                                    | N/A                                                                                                                                                      |
| F16                          | N/A - distant supply not considered at risk                                                                                             | N/A                                                                       | N/A                                                                                                    | N/A                                                                                                                                                      |
| F17                          | N/A - distant supply not considered at risk                                                                                             | N/A                                                                       | N/A                                                                                                    | N/A                                                                                                                                                      |
| F18                          | AWPR Private Water Supplies Field Survey F9-F10-F13-F18-F21, North Cookney – Allochie – Blackbutts Cottage Broomhill Farm Land Ref. 515 | N/A                                                                       | N/A                                                                                                    | N/A                                                                                                                                                      |
| F19                          | N/A - distant supply not considered at                                                                                                  | N/A                                                                       | N/A                                                                                                    | N/A                                                                                                                                                      |

## Part 2 Specific Requirements

| Private Water Supply ID Code | Summary of PWS Assessments                                                                                                              |                                                                                                                      |                                                          | Mitigation Requirements       |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-------------------------------|
|                              | Phase 2: PWS Field Survey Reports (Jacobs, 2007/08 issued)                                                                              | Phase 3: PWS Assessment Programme – Hydrogeological Report (Jacobs, 2012)                                            | Phase 4: Proposed PWS Monitoring Document (Jacobs, 2013) | PWS Mitigation by the Company |
|                              | risk                                                                                                                                    |                                                                                                                      |                                                          |                               |
| F20                          | N/A - suspected distant                                                                                                                 | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS F20-F21-F23-F38-F43 | N/A - PWS confirmed as being distant and not at risk     | N/A                           |
| F21                          | AWPR Private Water Supplies Field Survey F9-F10-F13-F18-F21, North Cookney – Allochie – Blackbutts Cottage Broomhill Farm Land Ref. 515 | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS F20-F21-F23-F38-F43 | N/A                                                      | N/A                           |
| F22                          | AWPR Private Water Supplies Field Survey F22-F36-F37, Bentyhowe Land Ref. 5065                                                          | N/A                                                                                                                  | N/A                                                      | N/A                           |
| F23                          | N/A - access was not granted by land owner                                                                                              | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS F20-F21-F23-F38-F43 | N/A - land owner refused proposed monitoring             | N/A                           |
| F24                          | N/A - distant supply not considered at risk                                                                                             | N/A                                                                                                                  | N/A                                                      | N/A                           |
| F25                          | N/A - PWS abandoned as per ES 2007                                                                                                      | N/A                                                                                                                  | N/A                                                      | N/A                           |
| F26                          | N/A - distant supply not considered at risk                                                                                             | N/A                                                                                                                  | N/A                                                      | N/A                           |
| F27                          | N/A - PWS abandoned as per ES 2007                                                                                                      | N/A                                                                                                                  | N/A                                                      | N/A                           |
| F28                          | N/A - distant supply not considered at risk                                                                                             | N/A                                                                                                                  | N/A                                                      | N/A                           |
| F29                          | N/A - PWS abandoned as per ES 2007                                                                                                      | N/A                                                                                                                  | N/A                                                      | N/A                           |
| F30                          | N/A - distant supply not considered at risk                                                                                             | N/A                                                                                                                  | N/A                                                      | N/A                           |
| F31                          | N/A - distant supply not considered at risk                                                                                             | N/A                                                                                                                  | N/A                                                      | N/A                           |

## Part 2 Specific Requirements

| Private Water Supply ID Code | Summary of PWS Assessments                                                                             |                                                                                                                      |                                                                                                        | Mitigation Requirements                                                                                 |
|------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
|                              | Phase 2: PWS Field Survey Reports (Jacobs, 2007/08 issued)                                             | Phase 3: PWS Assessment Programme – Hydrogeological Report (Jacobs, 2012)                                            | Phase 4: Proposed PWS Monitoring Document (Jacobs, 2013)                                               | PWS Mitigation by the Company                                                                           |
| F32                          | N/A - distant supply not considered at risk                                                            | N/A                                                                                                                  | N/A                                                                                                    | N/A                                                                                                     |
| F33                          | N/A - PWS abandoned as per ES 2007                                                                     | N/A                                                                                                                  | N/A                                                                                                    | N/A                                                                                                     |
| F34                          | N/A - distant supply not considered at risk                                                            | N/A                                                                                                                  | N/A                                                                                                    | N/A                                                                                                     |
| F35                          | N/A - distant supply not considered at risk                                                            | N/A                                                                                                                  | N/A                                                                                                    | N/A                                                                                                     |
| F36                          | AWPR Private Water Supplies Field Survey F22-F36-F37, Bentyhowe Land Ref. 5065                         | N/A                                                                                                                  | N/A                                                                                                    | N/A                                                                                                     |
| F37                          | AWPR Private Water Supplies Field Survey F22-F36-F37, Bentyhowe Land Ref. 5065                         | N/A                                                                                                                  | N/A                                                                                                    | N/A                                                                                                     |
| F38                          | AWPR Private Water Supplies Field Survey F38, Mains of Cookney Land Ref. 522                           | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS F20-F21-F23-F38-F43 | N/A                                                                                                    | Extension of mains connection required which is being undertaken by others in advance of the New Works. |
| F39                          | AWPR Private Water Supplies Field Survey F39-F40, Megray Farm and Glithno Farm Land Ref. 543 and 627   | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment of PWS F2 and F39                        | N/A - all properties are now on mains                                                                  | N/A                                                                                                     |
| F40                          | AWPR Private Water Supplies Field Survey F39-F40, Megray Farm and Glithno Farm Land Ref. 543 and 627   | N/A                                                                                                                  | N/A                                                                                                    | N/A                                                                                                     |
| F41                          | AWPR Private Water Supplies Field Survey F41, North Burnside - Morven Land Ref. 523-524                | N/A                                                                                                                  | N/A                                                                                                    | N/A                                                                                                     |
| F42                          | Water sample Mr Jackson                                                                                | N/A                                                                                                                  | N/A                                                                                                    | N/A                                                                                                     |
| F43                          | AWPR Private Water Supplies Field Survey F43, Burnside of Newhall and West Newhall Land Ref. 633 & 629 | AWPR Private Water Supply Assessment Programme - Hydrogeological Assessment and Modelling of PWS F20-F21-F23-F38-F43 | Hydrogeological and Hydrological Site Specific Specification of Monitoring of Private Water Supply F43 | Attempt replacement and if unsuccessful need to connect to mains.                                       |



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Part 2 Specific Requirements

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*Method Statement*

The Company shall prepare a method statement for approval by the Contracting Authority, which describes the procedure to be implemented to ensure that a water supply is maintained. The method statement should include matters described herein.

*Requirements for Temporary Water Supplies*

1. The Company shall put in place an emergency procedure to provide temporary water supplies should a PWS be impacted, including an effective channel of communication for land owners to notify the Company of any construction impacts on their PWS, to include a 24 hour hotline phone number.
2. The Company shall be responsible for investigating claims of impacts on PWS, determining whether the impacts are short or long term and attempting replacement or providing mains connection depending on requirements for the individual PWS as described in Table 1.
3. The Company shall be responsible for determining the capacity requirements for temporary water supply at each PWS where necessary.
4. The Company shall provide temporary water storage tanks, where deemed necessary, from Water Direct ([www.water-direct.co.uk](http://www.water-direct.co.uk)) or similar approved supplier, to the quality required to supply those landowners affected by the New Works and for the period until a PWS is installed or reinstated as required.
5. The Design shall ensure that diversions for Undertakers and owners of private apparatus shall be undertaken in a manner which shall minimise the risk of spillage or release into watercourses, ditches or surface drains.

*PWS Replacement*

6. The Company shall provide a programme for the replacement of PWS which reflects the requirements of the overall construction programme and clearly indicates the provision and duration of temporary water supply where required, pump tests for determining sustainability of replacement PWS and replacement PWS approval process.
7. For PWS replacement the method statement shall include:
  - provisions for access, site restoration and communications with land owners/ tenants;
  - methods for on-site testing for alternative supplies to include pump tests;
  - provisions for demonstrating new sources are suitable, sustainable and will not be impacted by the New Works, to be supported by monitoring data; and
  - Groundwater quality testing to include suite and frequency.
8. Baseline monitoring of PWS usage, undertaken for 12 months prior to commencement of construction of the New Works, shall be made available to the Company to assist in replacement design.
9. The Company shall attempt to locate a suitable and sustainable alternative source of water to match each land owner's or tenant's existing need in accordance with relevant

Part 2 Specific Requirements

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Regulations. The Company shall also take account of any additional occupancy information provided by the land owner's or tenant's, to complement monitoring records from the twelve months monitoring period.

10. The Company shall allow for undertaking up to two attempts at replacing the PWS and these attempts shall include pump tests in accordance with relevant Regulations. The PWS replacements are anticipated to be drilled wells but alternative methods of replacement may be considered by the Company in agreement with the Contracting Authority.
11. The Company shall endeavour to undertake PWS replacement within the PWS user land boundary. Where replacement PWS locations result in a network connection route which would traverse land owned by the Scottish Ministers the proposed replacement attempt locations shall be approved by the Contracting Authority.
12. The Company shall ensure that the alternative supply is suitable, sustainable and shall not be impacted by the New Works.
13. The Company shall have regard to the current guidance and requirements for Abstraction CAR Licencing where the Company is required to obtain CAR Licences for PWS replacement works.
14. Should the second replacement attempt be unsuccessful, the Company shall undertake public water mains connection as detailed below.
15. The methods of PWS replacement are to be approved by the Contracting Authority.

*PWS Monitoring*

16. The Method Statement shall include details pertaining to the following monitoring requirements:
  - undertaking monitoring during construction works to include monitoring locations and programme;
  - the frequency of sampling, testing and down-loading of data, and;
  - procedures for monitoring the PWS to ensure that any construction impact is detected.
17. Monitoring shall include continuous hydrogeological flow and monthly hydrogeological water quality monitoring at a number of PWS locations. Monitoring shall be undertaken by others for a period of 12 months prior to construction. The position (coordinates and levels) of monitoring locations may adjust from those proposed. However, the number of locations shall remain as per the details below as a minimum.
18. Monthly in-situ water quality testing is required at a number of PWS locations to include:
  - pH;
  - temperature; and
  - Electrical Conductivity.

## Part 2 Specific Requirements

19. The Company shall record all in-situ water quality test results and provide to the Contracting Authority within one week of sampling.
20. The Company shall appoint an UKAS Accredited Laboratory to undertake monthly and quarterly water quality testing based on the current PWS usage in accordance with Tables 2 and 3 below.

**Table 2 - Testing Requirements for PWS with Domestic and Livestock Usage**

| <b>Water Quality Testing for PWS<br/>with Domestic and Livestock Usage requiring Monitoring</b> |                            |                                |
|-------------------------------------------------------------------------------------------------|----------------------------|--------------------------------|
| <b>Monthly testing suite</b>                                                                    |                            | <b>Quarterly testing suite</b> |
| Temperature                                                                                     | Zinc                       | <i>monthly suite plus...</i>   |
| Electrical Conductivity                                                                         | Bromide                    | Cadmium                        |
| pH                                                                                              | Chloride                   | Nickel                         |
| Redox                                                                                           | Sulphate                   | Polyaromatic Hydrocarbons      |
| Dissolved Oxygen                                                                                | Soluble Nitrate            | Ammoniacal Nitrogen            |
| Calcium                                                                                         | Total Dissolved Solids     | Total Petroleum Hydrocarbons   |
| Sodium                                                                                          | Total Nitrogen             | Pesticides                     |
| Potassium                                                                                       | Enterococci                |                                |
| Magnesium                                                                                       | Escherichia coli (E. coli) |                                |
| Aluminium                                                                                       | Coliform bacteria          |                                |
| Iron                                                                                            | Cryptosporidium            |                                |
| Copper                                                                                          | Giardia lamblia            |                                |
| Lead                                                                                            |                            |                                |

**Table 3 - Testing Requirements for PWS with Livestock Usage Only**

| <b>Water Quality Testing for PWS<br/>with Livestock Usage Only requiring Monitoring</b> |                        |                                |
|-----------------------------------------------------------------------------------------|------------------------|--------------------------------|
| <b>Monthly testing suite</b>                                                            |                        | <b>Quarterly testing suite</b> |
| Temperature                                                                             | Iron                   | <i>monthly suite plus...</i>   |
| Electrical Conductivity                                                                 | Copper                 | Cadmium                        |
| pH                                                                                      | Lead                   | Nickel                         |
| Redox                                                                                   | Zinc                   | Polyaromatic Hydrocarbons      |
| Dissolved Oxygen                                                                        | Bromide                | Ammoniacal Nitrogen            |
| Calcium                                                                                 | Chloride               | Total Petroleum Hydrocarbons   |
| Sodium                                                                                  | Sulphate               | Escherichia coli (E. coli)     |
| Potassium                                                                               | Soluble Nitrate        | Pesticides                     |
| Magnesium                                                                               | Total Dissolved Solids |                                |
| Aluminium                                                                               | Total Nitrogen         |                                |

## Part 2 Specific Requirements

21. The Company shall provide the Contracting Authority with all monitoring data in Microsoft Excel format and certified laboratory certificates in hard copy format within two weeks of each monthly monitoring site visit.
22. The number of PWS monitoring locations shall be, as a minimum, as noted below and shown on drawing numbers B1033200/ADW/3000/W/PWS/001 to 043 :

| Requirement by the Company                                                                                                                            | Number | Comment                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------|
| Number of Hydrogeological Flow Monitoring Locations                                                                                                   | 22     |                                 |
| Number of Hydrogeological Groundwater Level Monitoring Locations                                                                                      | 3      | PWS N21c<br>PWS F43<br>PWS N22a |
| Number of Hydrogeological Water Quality Monitoring Locations                                                                                          | 19     |                                 |
| Number of PWS networks for which replacement shall be attempted and if unsuccessful networks which should be connected to mains                       | 8      |                                 |
| Number of PWS networks to be monitored and if impacted it is not capable of replacement and will require mains connection                             | 1      | PWS S45                         |
| Number of PWS networks to be monitored and if impacted may be capable of PWS replacement if unsuccessful networks which should be connected to mains. | 11     |                                 |
| Number of PWS networks to be monitored and if impacted no further action required as already have mains connection                                    | 1      | PWS N5b                         |

*Public Water Mains Connections*

23. In the event that a replacement PWS is not successfully achieved at a location where replacement is attempted, the Company shall liaise with the Contracting Authority, who shall be responsible for arranging connection of the PWS to the public water supply network. Pending completion of such connection works the Company shall arrange for and maintain a suitable temporary supply of water to the location concerned.

**APPENDIX O - CONTAMINATION AND MITIGATION**

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*Guidelines*

1. The Company shall comply with published guidelines, including but not limited to those contained within the following documents:
  - Guidelines for Environmental Risk Assessment and Management, published by the Department of the Environment, Transport and the Regions (DETR), the Environment Agency and the Institute for Environment and Health, 2000;
  - Contaminated Land Report 11 (CLR 11), Model Procedures for the Management of Land Contamination, Environment Agency, 2004;
  - Land Contamination Risk Assessment. A guide to good practice, Construction Industry Research and Information Association (CIRIA) C552, 2001;
  - Assessing risks posed by hazardous ground gases to buildings, CIRIA C665, 2007;
  - Guidance on Comparing Soil Contamination Data and a Critical Concentration; CL:AIRE, SAGTA and the Chartered Institute of Environmental Health (CIEH) May 2008;
  - Groundwater risk assessment guidance and tools including:
    - ConSim, Remedial Targets Methodology – Hydrogeological Risk Assessment for Land Contamination, Environment Agency, 2006;
    - Benchmarking and Guidance on the Comparison of selected Groundwater Risk Assessment Models, 2001;
    - National Groundwater and Contaminated Land Centre Report NL/00/14; and
    - Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination, Guidance on Pollution Prevention, Report NC/99/73, published by the Environment Agency, 2001.
2. The Company shall take full account of the information provided in the Contaminated Land Drawings Figures 1a to 1r inclusive, included in the Information Room, in the design, construction and maintenance of the New Works.



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**APPENDIX P - HYDROGEOLOGICAL AND HYDROLOGICAL MONITORING OF  
SENSITIVE ENVIRONMENTAL SITES (SES)**

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Part 2 Specific Requirements

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1. The design of the New Works shall ensure that no adverse impact occurs as a result of the construction of the scheme. Furthermore, the Company shall ensure protection to the following three Sensitive Environmental Sites/ ecological sites:

- (i) Corby and Lily Loch;
- (ii) Hare Moss; and
- (iii) Fishermyre.

Site specific information regarding each site is detailed herein. Further information is available in the environmental documentation.

2. The Company shall take cognisance of the information contained in this Appendix as part of the design.

*Monitoring Requirements*

3. Monitoring at SES locations shall include:
  - continuous flow/ level monitoring and recording using dataloggers of surface water levels in open channels;
  - water levels in lochs;
  - groundwater levels in standpipes;
  - rainfall data using rain gauges;
  - in-situ water quality monitoring; and
  - sampling of water for analytical laboratory testing.
4. The Company shall undertake monthly site visits to each monitoring equipment installation to download recorded data, take in-situ water quality testing, sample water for water quality laboratory testing, take in-situ level readings and check that all equipment is functioning correctly.
5. The Company shall be responsible for undertaking water quality monitoring at SES as follows:
  - (i) Monthly in-situ water quality testing at 20 locations, using field kit equipment for the following parameters:
    - pH;
    - temperature; and
    - Electrical Conductivity.
  - (ii) Monthly water sampling at the 20 locations for analytical laboratory analysis in an UKAS Accredited Laboratory (appointed by the Company).
6. The Company shall record all in-situ water quality test results and deliver them to the Contracting Authority within one week of testing.
7. The suites of water quality parameters to be tested in the laboratory are provided in Table 1.

## Part 2 Specific Requirements

**Table 1 – Analytical water quality testing suites**

| <b>Suite 1</b>          | <b>Suite 2</b>         | <b>Suite 3</b>               |
|-------------------------|------------------------|------------------------------|
| Temperature             | <i>Suite 1 plus...</i> | <i>Suite 2 plus...</i>       |
| Electrical Conductivity | BOD                    | Carbonate                    |
| pH                      | COD                    | Bicarbonate                  |
| Redox                   | Suspended Solids       | Arsenic                      |
| Dissolved Oxygen        |                        | Cadmium                      |
| Calcium                 |                        | Chromium                     |
| Sodium                  |                        | Nickel                       |
| Potassium               |                        | Selenium                     |
| Magnesium               |                        | Vanadium                     |
| Aluminium               |                        | Total Petroleum Hydrocarbons |
| Iron                    |                        | Polyaromatic Hydrocarbons    |
| Copper                  |                        | Ammoniacal Nitrogen          |
| Lead                    |                        |                              |
| Zinc                    |                        |                              |
| Bromide                 |                        |                              |
| Chloride                |                        |                              |
| Sulphate                |                        |                              |
| Nitrate                 |                        |                              |

## 8. The frequency of testing shall be (as a minimum):

- Suite 1 – monthly
- Suite 2 – quarterly
- Suite 3 – six monthly

The Company shall confirm the proposed increase in monitoring frequency in the method statement, for approval by the Contracting Authority, to accord with the programme and level of activity in the vicinity of each site, to give assurance that no adverse impact has occurred.

## 9. The Company shall provide the Contracting Authority with all monitoring data in a readable electronic format to include Microsoft Excel and certified laboratory certificates in hard copy format within two weeks of each monthly monitoring site visit.

## Part 2 Specific Requirements

**SITE SPECIFIC INFORMATION****HARE MOSS SES***Introduction*

1. A section of the proposed AWPR/B-T lies within the catchment area of Hare Moss SES, which is classified as degraded lowland raised bog and presently used as rough grazing. Location of Hare Moss SES is provided in the environmental documentation on Drawing B1033200/ADW/3000/W/PWS/024.

*Proposed Monitoring Locations*

2. The proposed monitoring locations are indicated on Drawing B1033200/ADW/3000/W/PWS/025 provided in the environmental documentation. Monitoring shall be undertaken by others for a period of 12 months prior to construction. The position (coordinates and levels) of monitoring locations may adjust from those proposed. However, the number of locations will remain as per the details below.

*Site 1: Burn of Ardoe – Hydrological Inflow and Water Quality Monitoring*

3. The purpose of the flow gauging is to monitor the inflow to the Hare Moss SES from the Burn of Ardoe. The water quality monitoring point shall be located at the same position as the flow monitoring location.

*Site 2: Hydrological Rainfall Gauge*

4. Rainfall measurements shall be undertaken in close proximity to the northern borehole network. This is to comprise a standard storage gauge and an automatic tipping bucket rain gauge.

*Groundwater Standpipes - Hydrogeological Groundwater Level and Water Quality Monitoring*

5. Groundwater level and water quality monitoring is required in four groundwater monitoring standpipes installed at Hare Moss SES. The locations and characteristics of these monitoring standpipes are provided in Table 2 below.

**Table 2: Groundwater Monitoring Description**

| <b>Borehole Reference</b> | <b>OS Grid Ref.</b> | <b>Screen Zone Depth (mbgl)</b>  | <b>Screen Zone Geology</b> | <b>Internal Diameter of Installation (mm)</b> |
|---------------------------|---------------------|----------------------------------|----------------------------|-----------------------------------------------|
| BHHM002                   | NO 90884 99564      | 0.7 to 1.7                       | Peat                       | 50                                            |
| BHHM003                   | NO 91020 99538      | 1 to 1.9                         | Peat                       | 50                                            |
| BHHM004                   | NO 90814 99239      | 0.5 to 0.7                       | Peat                       | 50                                            |
| BHB*(proposed)            | Near NO 90934 99393 | 1 to 2 (to be confirmed on site) | Peat                       | 50                                            |

\* borehole number and OS grid reference to be confirmed.

6. Within each standpipe groundwater levels shall be continuously recorded to allow an assessment of the local groundwater levels. This shall be downloaded monthly by the *Contractor* and a manual measurement shall also be taken. Any recalibration or reinstallation shall be undertaken at the same site visit, if found necessary.

## Part 2 Specific Requirements

**FISHERMYRE WETLAND SES***Introduction*

1. A section of the proposed AWPR/B-T lies within the catchment area of Fishermyme Wetland SES. Location of Fishermyme Wetland SES is provided in the environmental documentation on Drawing B1033200/ADW/3000/W/PWS/026.

*Proposed Monitoring Locations*

2. The proposed monitoring locations are indicated on Drawing B1033200/ADW/3000/W/PWS/027 provided in the environmental documentation. Monitoring shall be undertaken by others for a period of 12 months prior to construction. The position (coordinates and levels) of monitoring locations may adjust from those proposed. However, the number of locations will remain as per the details below.

*Site 1: Green Burn – Hydrological Outflow and Water Quality Monitoring*

3. The purpose of the flow gauging is to monitor the outflow from Fishermyme Wetland SES on Green Burn. The water quality monitoring point shall be located at the same location as the flow monitoring location.

*Site 2: Fishermyme Inflow – Hydrological Inflow and Water Quality Monitoring*

4. The purpose of the flow gauging is to monitor the inflow to Fishermyme Wetland SES. The water quality monitoring point shall be located at the same position as the flow monitoring location.

*Site 3: Hydrological Rainfall Gauge*

5. Rainfall measurement shall be undertaken in close proximity to the groundwater monitoring borehole FLBH053E. This shall comprise a standard storage gauge and automatic tipping bucket rain gauge.

*Groundwater Standpipes: Hydrogeological Groundwater Level and Water Quality Monitoring*

6. Groundwater level and water quality monitoring is required in five groundwater monitoring standpipes installed at Fishermyme Wetland SES. The locations and characteristics of these monitoring standpipes are provided in Table 3 below.

**Table 3: Groundwater Monitoring Description**

| <b>Borehole Reference</b> | <b>OS Grid Ref.</b> | <b>Screen Zone Depth (mbgl)</b> | <b>Screen Zone Geology</b> | <b>Internal Diameter of Installation (mm)</b> |
|---------------------------|---------------------|---------------------------------|----------------------------|-----------------------------------------------|
| FLBH053A                  | NO 86842 90430      | 0.3 to 1.5                      | Peat, sand and gravel      | 50                                            |
| FLBH053B                  | NO 86843 90453      | 0.3 to 1                        | Peat, sand and gravel      | 50                                            |
| FLBH053C                  | NO 86904 90442      | 0.2 to 1.2                      | Peat, sand and gravel      | 50                                            |
| FLBH053D                  | NO 86959 90441      | 0.3 to 1.45                     | Sand and gravel            | 50                                            |
| FLBH053E                  | NO 86977 90422      | 0.2 to 1                        | Sand and gravel            | 50                                            |

\* Borehole number and OS grid reference to be confirmed.

7. Within each standpipe groundwater levels shall be continuously recorded to allow an assessment of the local groundwater levels. This shall be downloaded monthly by the Company and a manual measurement shall also be taken, with any recalibration or reinstallation undertaken if found to be necessary

## **CORBY LOCH AND LILY LOCH SES**

### *Introduction*

1. A section of the proposed AWPR/B-T lies within the catchment area of Corby Loch and Lily Loch SES. Corby Loch has a catchment area of 3.6km<sup>2</sup> and has been designated a Site of Special Scientific Interest (SSSI) and Lily Loch has a catchment area of 1.2km<sup>2</sup> and has also been designated a SSSI. Location of Corby Loch and Lily Loch SES is provided in the environmental documentation on Drawing B1033200/ADW/3000/W/PWS/028.

### *Proposed Monitoring Locations*

2. The proposed monitoring locations are indicated on Drawing B1033200/ADW/3000/W/PWS/029 provided in the environmental documentation. Monitoring shall be undertaken by others for a period of 12 months prior to construction. The position (coordinates and levels) of monitoring locations may adjust from those proposed. However, the number of locations will remain as per the details below.

#### *Site 1: Main Inflow to Corby Loch – Hydrological Inflow and Water Quality Monitoring*

3. The purpose of the flow gauging is to monitor the inflow into Corby Loch SES. The water quality monitoring point shall be located at the same position as the flow monitoring location.

#### *Site 2: Corby Loch – Loch Water Level and Water Quality Monitoring*

4. The purpose of the water level gauge is to monitor the loch water level within Corby Loch SES. The water quality monitoring point shall be located at the same position as the level gauge monitoring location.

#### *Site 3: Main Inflow to Lily Loch – Loch Inflow and Water Quality Monitoring*

5. The purpose of the flow gauging is to monitor the inflow into Lily Loch SES. The water quality monitoring point shall be located at the same position as the flow monitoring location.

#### *Site 4: Lily Loch – Loch Water Level and Water Quality Monitoring*

6. The purpose of the level gauge is to monitor the loch level within Lily Loch SES. The water quality monitoring point shall be located at the same position as the level gauge monitoring location.

#### *Site 5: Hydrological Rainfall Gauge*

7. Rainfall measurement shall be undertaken in close proximity to the flow monitoring location and shall comprise a standard storage gauge and an automatic tipping bucket rain gauge.

#### *Groundwater Standpipes: Hydrogeological Groundwater Level and Water Quality Monitoring*

8. Groundwater level and water quality monitoring is required in four groundwater monitoring standpipes installed at Corby Loch and Lily Loch SES. The locations and characteristics of these monitoring standpipes are provided in Table 4 below.



## Part 2 Specific Requirements

**Table 4: Groundwater Monitoring Description**

| <b>Borehole Reference</b> | <b>OS Grid Ref.</b>    | <b>Screen Zone Depth (mbgl)</b> | <b>Screen Zone Geology</b>                     | <b>Internal Diameter of Installation (mm)</b> | <b>Comments</b>        |
|---------------------------|------------------------|---------------------------------|------------------------------------------------|-----------------------------------------------|------------------------|
| DK175                     | NJ 92030<br>14653      | 1 - 3                           | Mostly peat, sand at the bottom                | 19                                            | Near Lily Loch inflow  |
| DK176                     | NJ 92174<br>14587      | 3.5 -5                          | Bottom of peat layer, clay, gravel and cobbles | 19                                            | Between both Lochs     |
| DK177                     | NJ 92357<br>14749      | 1 - 3                           | Sand, peat, sand and gravel                    | 19                                            | Near Corby Loch inflow |
| BHA*                      | Near NJ<br>92174 14587 | 0.5 - 3                         | Peat only                                      | 50                                            | target peat only       |

\* Borehole number and OS grid reference to be confirmed.

9. Within each standpipe groundwater levels shall be continuously recorded to allow an assessment of the local groundwater levels. This shall be downloaded monthly by the *Contractor* and a manual measurement shall also be taken. Any recalibration or reinstallation shall be undertaken at the same site visit, if found necessary.

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Aberdeen Western Peripheral Route / Balmedie-Tipperty  
AWPR / B-T Managing Agent, Aberdeen Business Centre,  
Willowbank House, Willowbank Road, Aberdeen AB11 6YG

Tel: **01224 332322** | Fax: **01224 322 361**

Email: **[enquiries@awpr.co.uk](mailto:enquiries@awpr.co.uk)** | Web: **[www.awpr.co.uk](http://www.awpr.co.uk)**

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# Aberdeen Western Peripheral Route / Balmedie - Tipperty

Competition for the Design, Build, Finance and Operation of the  
Aberdeen Western Peripheral Route / Balmedie - Tipperty

Volume Five

Schedule 2: New Works Requirements

Part 3: Specific Requirements Traffic Scotland Equipment

709/ACP/600

**Part 3: Specific Requirements  
Traffic Scotland Equipment**

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**Part 3: Specific Requirements  
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**SCHEDULE 2: NEW WORKS REQUIREMENTS****PART 3: SPECIFIC REQUIREMENTS – TRAFFIC SCOTLAND EQUIPMENT**

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## **1 General Requirements**

### **1.1 Introduction**

- 1.1.1 Intelligent Transport Systems (ITS) are technology systems / facilities that assist road network operators in providing an efficient, reliable and safe transport network. This is achieved by deploying temporary controlling and information responses at a strategic or local level to complement the fixed route signing. These responses therefore manage normal, planned or unplanned conditions on the road network but can also be used to influence traveller's behaviour and deliver policy objectives. This is achieved for the trunk road network in Scotland through Transport Scotland's Traffic Scotland Service (TSS). The TSS is described in APPENDIX F.
- 1.1.2 To enhance the TSS additional ITS facilities will be deployed on the trunk road network through the AWPR/B-TDBFO contract. The Company shall design, install and commission the additional facilities that include:
- (a) Variable Message Signs (VMS) to display strategic and tactical text messages and / or multi-coloured pictograms to drivers. These are located in advance of the key junctions, or network decision points;
  - (b) Closed Circuit Television (CCTV) monitoring to provide full coverage of the corridor at the key junctions and for visual monitoring by TSS operators and other parties that the CCTV images are shared with;
  - (c) Traffic monitoring and measurement system to gather traffic data, via subsurface induction loops, for the National Traffic Data Service (NDS). This service includes Weigh-in-Motion (WIM) measurement facilities. These facilities are generally located at the mid-point of network links;
  - (d) Journey Time (JT) facilities at the ends of network links/ key junctions to collate information to implement control strategies and for statistical analysis purposes;
  - (e) Communication network to provide the backbone for all ITS implementations whether it is for local connections between roadside equipment and cabinets or long distance connections between a control centre and the roadside. The communications network shall be installed in a duct system and shall be based on a fibre cable backbone; and
  - (f) Electrical power network.
- 1.1.3 The Contracting Authority will act on behalf of Transport Scotland in the enhancement to the TSS as detailed in this Part 3.
- 1.1.4 The Contracting Authority shall arrange for the provision of the technology components and software systems for the ITS facilities, known as Active Equipment, as detailed in Appendix A for installation and commissioning by the Company. The Company shall be required to provide the infrastructure necessary to support the Active Equipment. This infrastructure is known as the Passive Network.
- 1.1.5 Prior to the TSS similar functionality was provided through the National Driver Information and Control System (NADICS). A number of existing documents, specifications and drawings may refer to NADICS. The terms NADICS and TSS are equivalent in all documentation.
- 1.1.6 Additional requirements relating to ITS are included in Schedule 2: Part 2, which in summary covers general requirements and also specific requirements for Structures (VMS

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**Traffic Scotland Equipment**

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foundations), vehicle restraint systems, road lighting, maintenance access, hard landscaping and ancillary items.

## **1.2 Existing ITS Facilities**

1.2.1 The TSS has existing Traffic Scotland Equipment (TSE) located on the trunk road network including VMS, NDS, power and communication networks. The Company shall design, provide, install and commission the ITS facilities without compromising the ability to deliver the TSS through the existing TSE.

1.2.2 In providing the ITS facilities the Company will need to upgrade, decommission and integrate with existing TSE. The requirements for existing TSE are detailed in Section 3.3 and 3.4.

1.2.3 The Company shall undertake the same obligations relating to TSE for all ITS equipment that belongs to, or is under the control of Aberdeen City Council and Aberdeenshire Council.

## **1.3 Provision of the ITS Works**

1.3.1 The Company shall:

- (a) prepare a "Strategy of ITS New Works for Traffic Scotland Equipment Document" in accordance with APPENDIX E of this Part 3 for submission to and approval by the Contracting Authority prior to undertaking any site installation of TSE;
- (b) design the TSE and supporting roadside infrastructure to deliver the ITS facilities detailed in this Part 3. This shall include a communication network that shall connect the TSE to the Traffic Scotland National Control Centre (TSNCC) through roadside cabinets, two core IP switch transmission stations and two third party communication links;
- (c) provide the Passive Network and install the Active Equipment that incorporates Transport Scotland Issued Equipment (TSIE);
- (d) test and commission all TSE in accordance with the Specification and Section 10 and ensure that the TSE is operational both on the Site and from the TSNCC; and
- (e) provide training and documentation to permit handover of the TSE to the TSS for transfer to the live TSS network. The Company shall assist the TSS in the integration of new TSE in accordance with Section 10.9.

1.3.2 The Contract Drawings listed in Schedule 2: Part 4 comprise both specific requirements and standard details of non-site specific installations of standard equipment and site layouts. The Company shall use both the specific requirements and these standard details to prepare site specific layouts to meet the New Works Requirements and Specification. Where these standard details cannot be achieved the Company shall consult and comply with the requirements of the Contracting Authority

1.3.3 The Contracting Authority shall arrange for the provision of only the TSIE as detailed in APPENDIX A of this Part 3 required to complete the New Works. Unless otherwise specified, the Company shall provide all other TSE necessary to complete the New Works.

## **1.4 Extent of New Works**

1.4.1 The extent of the ITS works are within the Land Made Available as detailed in Schedule 2: Part 2 and Schedule 2: Part 4 Appendix 1/7.

**Part 3: Specific Requirements**  
**Traffic Scotland Equipment**

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1.4.2 The Company is required to connect and interface with TSE outside the LMA to complete the ITS works and this shall be achieved with minimal planned disruption to the existing TSE and TSS. This TSE includes but is not limited to communications networks, power supply cabinets, TSE cabinets and the control system and equipment in the TSNCC. Access to these locations will be arranged by the Contracting Authority.

**1.5 Electrical Supply**

1.5.1 The Company shall provide power supplies and the power supply distribution network to all new TSE sites in accordance with Section 5.3.

1.5.2 In planning the implementation of the ITS works the Company shall note the requirements of Section 4.1.11 and ensure sufficient lead-in times are allowed in the works programme for the procurement of mains electricity from the supply company.

1.5.3 The Company shall report on a monthly basis to the Contracting Authority the status of each power supply for TSE using the tracker template detailed in APPENDIX D.

**Part 3: Specific Requirements  
Traffic Scotland Equipment**

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## **2 Consultation and Third Parties**

### **2.1 General**

- 2.1.1 The TSS has a number of equipment and service providers as described in APPENDIX F of this Part 3. The Company shall consult and comply with the requirements of the Contracting Authority regarding liaison with TSS equipment and service providers required to complete the works detailed in this Part 3. In addition, the Company shall consult and comply with the Contracting Authority with regard to the interface between the TSS equipment provided as TSIE and the Passive Network, provided by the Company, in respect of weight, size, fixing arrangements and the like.
- 2.1.2 The TSS involves close liaison with other parties involved in operating the network in Scotland. The parties that work closely with the TSS to provide a coordinated response to the management of incidents and deliver route guidance are Aberdeen City Council, Aberdeenshire Council, the Police and Trunk Road Operating Companies. The Company shall consult and comply with the requirements of Aberdeen City Council and Aberdeenshire Council regarding existing ITS equipment that belongs to, or is under the control of them and the interface with the New Works.
- 2.1.3 The Company shall provide a communication network that is fully compatible with the TSS existing communication network, including the third party links between the transmission stations and the TSNCC. The Company shall consult and comply with the requirements of the Contracting Authority regarding details of the communications network design and provision.

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### **3 Traffic Scotland Equipment**

#### **3.1 General**

3.1.1 Not used

3.1.2 Not Used

3.1.3 The Contracting Authority will arrange the modifications as required to the instation at the TSNCC, to operate the TSE and modify or develop applications as necessary to accommodate the TSIE. To allow the Contracting Authority to make the necessary arrangements for modifications to existing TSE equipment the Company shall provide to the Contracting Authority the following information at least six months prior to the the modified instation being required to operate/test any New Works,:

- (a) Ordnance Survey grid reference coordinates and details of changes in lane configuration and lane relationships along the length of the road;
- (b) Ordnance Survey grid reference coordinates and details of changes in the default speed limit of traffic along the length of the road,
- (c) Ordnance Survey grid reference coordinates and dimensions, where applicable, of maintenance access gates, maintenance access slips and maintenance hard standings;
- (d) Ordnance Survey grid reference coordinates and road alignment details to allow the new road to be overlaid on the Traffic Scotland operational instation geographical mapping;
- (e) Ordnance Survey grid reference coordinates of all TSE equipment and its cross sectional position; and
- (f) a schedule of all TSE with chainage and equipment reference names in accordance with Appendix B.

Any updates required to the information detailed in (a) to (f) above, shall be undertaken by the Company and provided to the Contracting Authority within 10 working days of any change to the Company's design being finalised.

3.1.4 To allow the Contracting Authority to order TSIE and arrange all modifications and configurations described in Section 3.1.3, the Company shall notify the Contracting Authority of the TSIE requirements and instation and TSE modifications and configuration in accordance with the following lead-in time requirements:

- (a) configuration of Instation/software system to accommodate new TSE and TSE that requires to be relocated as part of the New Works - six months;
- (b) delivery of TSIE – twelve months written notice and confirmation 1 month prior to actual delivery requirement;
- (c) notification to the Contracting Authority of any New Works affecting the existing TSE and Traffic Scotland Service – six months;
- (d) the Contracting Authority's attendance to witness work – 21 days;
- (e) notice to uplift TSIE from the Nominated TSIE Store – seven days; and
- (f) configuration of an item of TSIE for the IP communications network – three months from notification regarding configuration requirements.



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3.1.5 The Company shall not undertake any testing in accordance with Section 10 on the Traffic Scotland Service operational installation until the necessary modifications and configuration input have been undertaken and released by the Contracting Authority. This release will not occur until a date not less than four months prior to the additional TSE being required as part of the TSS.

3.1.6 The Contracting Authority will plan, undertake and release the configuration works based on the Company's final design. The Company shall be responsible for the cost of any additional modification, configuration and data input effort by the TSS service providers as a result of changes to the Company's final design.

### **3.2 Transport Scotland Issued Equipment**

3.2.1 The TSS procures various items of TSE through term and call-off contracts with different manufacturers and suppliers. The Contracting Authority will issue to the Company TSE as detailed in APPENDIX A of this Part 3 required to complete the New Works, for installation, testing and commissioning by the Company. This TSE is referred to as TSIE.

3.2.2 APPENDIX A of this Part 3 identifies those large items of TSIE that shall be dispatched direct to the "**Company's Traffic Scotland Equipment Assembly Point**" from Traffic Scotland Service suppliers. All other TSIE shall be uplifted and transported by the Company from the Traffic Scotland Service Nominated TSIE Store to Site or the Company's TSE Assembly Point.

3.2.3 The Traffic Scotland Service Nominated TSIE Store is located on the M80 Motorway between Glasgow and Stirling.

3.2.4 Where the Company disassembles TSIE to ease transportation to Site the Company shall be responsible for reassembly and testing to ensure that the equipment is operational and has not been damaged during disassembly, transportation, reassembly or installation. Any damage incurred shall be treated in the same way as Company's damage to TSE and shall be rectified at the Company's expense.

3.2.5 The Company shall populate and maintain the TSE schedule within Appendix C to manage the planning, ordering, dispatch and installation of TSIE such that the status of each and every item of TSIE can be readily determined by both the Company and the Contracting Authority. The TSIE order and control process and associated records shall be in an electronic format and identify for each item of TSIE the following:

- (a) Traffic Scotland Service TSE equipment number of the TSIE;
- (b) serial number of the TSIE;
- (c) date ordered;
- (d) earliest date for delivery based on the lead in time detailed in Section 3.1.4;
- (e) date uplifted by the Company;
- (f) Nominated TSIE Store equipment release note reference number;
- (g) date delivered to the Company by the supplier, the supplier's name and goods delivered reference number, for TSIE dispatched direct from Traffic Scotland Service supplier;
- (h) date the TSIE was installed on Site;
- (i) Site Acceptance Test ("**SAT**") dates for each TSIE and successful Pre-commissioning SAT certificate reference number; and

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- (j) successful Commissioning SAT certificate reference number.
- 3.2.6 The TSIE process order and control form and associated records shall be version controlled and backed up by the Company.
- 3.2.7 Where activity is taking place that requires the TSIE order and control form to be modified the Company shall issue the modified order and control form to the Contracting Authority on a weekly basis or as instructed by the Contracting Authority.
- 3.2.8 The Company shall ensure that the request for delivery of TSIE matches the Construction Programme. The Company shall comply with the following constraints:
- (a) TSIE supplied directly to the Company shall be subject to a minimum delivery order so that efficient use of the supplier's transport is made. The minimum delivery order shall be 75 percent of the capacity of the Contracting Authority's TSIE delivery vehicle. The Company shall be responsible for the additional transport costs associated with inefficient supplier transport use;
  - (b) the Nominated TSIE Store operates between 08:30 hours and 16:30 hours Monday to Friday excluding statutory holidays. The Company shall provide written notice to the Contracting Authority, in compliance with the lead in times detailed in Section 3.1.4, of the Company's intention to uplift TSIE. The written notice shall include a list of TSIE to be uplifted;
  - (c) TSIE equipment waiting to be installed within a cabinet shall be stored by the Company in an environment that is equivalent to that of its final location. In the case of VMS the Company shall within 4 hours of taking delivery of the VMS connect the equipment to a power source which shall remain in place while the equipment is in storage;
  - (d) the Company shall advise the Contracting Authority of the location and description of the store that the Company shall use, at least 28 days prior to the TSIE being uplifted by the Company from the Nominated TSIE Store. The Company shall also store the equipment supplied directly to the Company in a safe, secure and heated environment to avoid potential damage prior to installation by the Company; and
  - (e) the Company shall complete and submit to the Contracting Authority in compliance with the lead in times detailed in Section 3.1.4 the TSIE Requisition forms for all items of TSIE. A separate form shall be provided for each equipment type ie CCTV form; VMS form etc
- 3.2.9 The Company shall appoint a Transport Scotland Issued Equipment Controller ("TSIE Controller") whose duties shall be to liaise with the Contracting Authority on all matters relating to TSIE.
- 3.2.10 The Contracting Authority shall not accept any request from the Company for the release of TSIE unless it is included with a delivery programme that has been agreed with the Contracting Authority.
- 3.2.11 Written notification shall be provided to the Contracting Authority, in compliance with the lead-in times detailed in Section 3.1.4 by the Company's TSIE Controller, of the planned requirement to release TSIE from the Nominated TSIE Store. The request for TSIE shall be on a just-in-time basis and take cognisance of minimum order requirements to avoid inefficiency of transportation. The Company shall take account of the lead-in time for the delivery of TSIE within the Construction Programme.

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- 3.2.12 Faulty or non-operational TSIE, identified during testing in accordance with Section 10, shall be replaced or repaired within 14 days of notification to the Contracting Authority. Subject to the nature of the fault the Contracting Authority may arrange repair of the equipment at the Company's TSE Assembly Point, and the Company shall facilitate access for the Traffic Scotland Service supplier's to undertake repairs to rectify such faulty or non-operational TSIE. Faulty or non-operational TSIE not being repaired at the Company's TSE Assembly Point shall be returned to Traffic Scotland Service Nominated TSIE Stores or shall be uplifted by the provider of the TSIE. Replacement / repaired TSIE shall be subject to testing in accordance with Section 10.

### **3.3 Existing Traffic Scotland Equipment**

- 3.3.1 The Company shall ensure that all the existing TSE affected by the New Works remains operational at all times until such time that the existing TSE requires to be removed to facilitate the permanent New Works. The Company shall take whatever measures are required to protect, divert, reroute or relocate TSE as detailed in Section 3.4 to maintain its operational status unless the Contracting Authority has previously agreed in writing that the TSE downtime can occur. The Company shall, at the request of the Contracting Authority, provide TSS compliant equipment to provide equivalent functionality of the existing TSE while the downtime occurs.
- 3.3.2 The Company shall undertake investigations as necessary to confirm the condition of the existing Active Equipment and Passive Network within the Site or connected to the Site that is required to complete the New Works. The Company shall ascertain as part of these investigations the location and quantity of all existing TSE and associated communications and power networks installed within the Site. The Company shall use all information gained from these investigations in the design of the New Works.
- 3.3.3 With regard to damage to the existing TSE by the Company, the Company shall take cognisance of and provide all assistance necessary to allow Traffic Scotland Service providers to fulfil their obligations in relation to immediate step-in rights to make repairs to TSE and any costs so incurred by the Traffic Scotland Service shall be chargeable to the Company. Any interruption or delay caused to the Company as a result of the application of these step-in rights to make repairs shall lie solely with the Company. The Company shall provide such assistance and resources to the Contracting Authority to facilitate repairs being undertaken.
- 3.3.4 The Contracting Authority shall not apply these step-in rights if the Company provides immediate evidence that repairs to damaged TSE shall be undertaken by the Company within the following timescales:
- (a) to attend at the point of damage within one hour;
  - (b) commence to make repair within thirty minutes of attending the point of damage; and
  - (c) to make a cable serviceable within six hours of attending the point of damage.
- 3.3.5 The Company shall record their attendance and repair times for each and every occurrence of cable damage and shall submit to the Contracting Authority such time records within twenty four hours of the damage occurring. If the repair to TSE is of a temporary nature the permanent repair shall become an obligation on the Company. The permanent repair shall be undertaken within twenty eight days.
- 3.3.6 The Company shall maintain a written record, including marked up drawings which detail all damage to TSE. Such records shall include where, when and what was damaged and detail the temporary and/or permanent repairs which were undertaken. In addition to

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maintaining such records in accordance with the Specification, the Company shall submit records to the Contracting Authority within 24 hours of completing the permanent repair.

- 3.3.7 Within 3 months from the Effective Date, the Company shall confirm in writing to the Contracting Authority those elements of the existing TSE which are affected by the New Works. The Company shall provide a schedule of the location details and type of existing TSE and the complete course of action that shall be undertaken by the Company to protect, divert, reroute, relocate, provide equivalent functionality equipment, to decommission, reuse, relocate, uplift to store or to dispose of the TSE. The schedule shall be accompanied by a programme and method statements detailing how the Company shall ensure that the TSS shall remain operational during the New Works and how the TSE shall be dealt with. The schedule, programme and method statement shall be submitted to the Contracting Authority to provide at least three months advance notification of any New Works affecting the existing TSE and TSS. Any infrastructure associated with existing TSE that is being decommissioned by the Company shall be removed to a minimum of 300mm below ground level.
- 3.3.8 TSE identified by the Contracting Authority for uplift to the Traffic Scotland Service Nominated TSIE Store shall be arranged and carried out by the Company.
- 3.3.9 Cabling made redundant by the New Works and moved from its original position in the ground shall be removed from Site and disposed of by the Company. Other cabling made redundant and not disturbed can remain in situ provided it does not form a hazard to maintainers, operators or Users. All existing cables made redundant and that remain in situ shall be recorded on as-built drawings and labelled using cable markers in accordance with Clause 1507A (Schedule 2: Part 4) of the Specification.
- 3.3.10 The TSE designated for disposal shall be disposed of in accordance with the EC Waste of Electrical and Electronic Equipment (WEEE) Regulations and the Company's Environmental Management Plan.
- 3.3.11 The Company shall advise the Contracting Authority of all existing TSE to be made redundant as a result of the New Works. The Company shall consult and comply with the requirements of the Contracting Authority in relation to those items of TSE to be removed from the Site and taken to the TSIE Nominated Store.

#### **3.4 Diversion, Re-routing or Relocation of Existing Traffic Scotland Equipment**

- 3.4.1 The Design shall take cognisance of the importance of both existing and new TSE located within the scheme to the wider TSS, and ensure all TSE is operational for the duration of the works.
- 3.4.2 The Company shall divert, re-route or relocate existing TSE to prevent disruption to the TSS or damage to TSE to comply with the requirements of this Part 3 and Clauses 1521A and 1528A of Schedule 2: Part 4.
- 3.4.3 The Company shall ensure that the connectivity with the existing TSE and associated communications and power networks out with the Site are not affected by the New Works and remain operational at all times.
- 3.4.4 Any temporary Passive Network shall include, but shall not be limited to, an armoured multi-pair copper communications cable to BT specification CW1128/1198 with 0.9mm conductors, and armoured optical fibre cable to WOEM 4421 and armoured power cables in accordance with Clause 1506A of Appendix 0/5, where required.

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- 3.4.5 The Company shall only interrupt the existing cabling network immediately prior to works commencing in any part of the Site.
- 3.4.6 The Company shall provide and maintain a continuous temporary power supply network for the TSE that is affected by the New Works. The Company shall identify the power supply network associated with the existing TSE and determine the location of diverted, re-routed or relocated equipment, the duration of any Temporary Works and the requirements for continuous operation.
- 3.4.7 The Company shall ensure all Temporary Works for cabling are laid within ducting that is buried underground. The number, depth, routing and protection of the duct, and any Temporary Works for cabling shall be agreed with the Contracting Authority prior to implementing.
- 3.4.8 The Company shall suitably mark with marker tape or other suitable means the temporary cabling works to prevent accidental damage during the New Works.
- 3.4.9 In the design of diversions and the like, the Company shall consider the requirement to maintain the TSE at all times and shall provide all necessary infrastructure to enable safe maintenance of the TSE by organisations employed as part of the Traffic Scotland Service.
- 3.4.10 The Company shall ensure the diversion, re-routing or relocation of TSE is tested and commissioned and shall assist the Traffic Scotland Service providers as necessary to ensure the TSE is operational following such works. Temporary Works for TSE shall terminate within the existing TSE located at the extents of the Site or nearest connection point not affected by the New Works.
- 3.4.11 The Company shall ensure all diversion, re-routing or relocation of TSE is functionally tested prior to and after relocation of TSE in accordance with Section 10 and the Specification.
- 3.4.12 The Company shall ensure all non-operational TSE is covered over where practicable with purpose-made covers marked with 'not in use' or identified with appropriate signage to advise Users that the TSE is not in use. The Company shall remove such 'not in use' covers and signs when the TSE is available for use by Users.
- 3.4.13 The Company shall provide method statements submitted to and approved by the Contracting Authority for any disconnections or reconnection of TSE from or onto the operational TSS. To allow the Contracting Authority the opportunity to witness these works the Company shall provide notice of such disconnections and reconnections in compliance with Section 3.1.4.
- 3.4.14 At the Contracting Authority's discretion the requirement for witnessing work, as described in Section 3.4.13, may be waived.

### **3.5 Connection of New and Existing Traffic Scotland Equipment**

- 3.5.1 Each new item of TSE which connects to the existing TSE shall be subject to testing and commissioning in accordance with Section 10 and the Specification.
- 3.5.2 The Company shall complete the installation and testing of all TSE at the roadside a minimum period of 56 days prior to requesting the Acceptance Certificate. Within this 56 day period the first 42 days shall be for the Company to undertake commissioning of TSE.

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The final 14 day period shall be for the use of the Contracting Authority, supported by the Company as detailed in Section 10, to undertake additional testing and fine tuning.

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## **4 Active Equipment**

### **4.1 General**

- 4.1.1 Active Equipment is segregated into the following communications traffic types:
- (a) Video (from roadside CCTV cameras); and
  - (b) Data (for example to/from Multi-Purpose Controller (MPC), VMS, JT cameras, CCTV controllers, networked computers, etc.)
- 4.1.2 The Active Equipment communications traffic shall be connected to the IP network at transmission stations, Traffic Scotland 600(S) cabinets and at remote equipment sites using Ethernet over the fibre optic cable network. Active Equipment communications traffic shall be capable of being recovered at transmission stations and at the TSNCC.
- 4.1.3 The Active Equipment includes a communications system of switches/routers, connecting devices and transmission equipment.
- 4.1.4 The communications system shall comply with the following requirements:
- (a) A core / distribution network, consisting of Ethernet multi-layer switches connected to provide resilience through redundancy using the longitudinal fibre optic network;
  - (b) A local access network for connecting roadside TSE to the core / distribution network, consisting of Ethernet switches connected to provide resilience through redundancy using the longitudinal and local fibre optic network;
  - (c) Multi-layer switches located in transmission stations shall be connected to other transmission station multi-layer switches and to roadside cabinet switches;
  - (d) Roadside switches shall be connected to adjacent roadside switches or to an adjacent transmission station switch. Switches shall be supplied with all necessary fibre optic interface equipment, and shall require patch leads with Fixed Connectors ("FC"); and
  - (e) Switches shall require local copper Ethernet connection using Category 5e ("CAT5e") cables.
- 4.1.5 Prior to commencing the IP communications infrastructure design the Company shall request from the Contracting Authority confirmation of the IP communication equipment that is available as TSIE and the Contracting Authority will confirm that information within 21 days.
- 4.1.6 The Company shall provide information to the Contracting Authority to allow them to undertake the IP design. This information is termed the IP communications infrastructure design which clearly identifies the location of all the TSE. The Company shall consult and comply with the requirements of the Contracting Authority regarding the IP communications infrastructure design to ensure that the IP communications infrastructure design philosophy will yield a design which will interface with the existing Traffic Scotland Service network. The Company shall submit the IP communications infrastructure design to the Contracting Authority for it to be considered by the TSS providers. The Company shall incorporate IP communications infrastructure comments made by the TSS providers into the IP communications infrastructure design.
- 4.1.7 In finalising the IP communications infrastructure design, the Company shall notify the Contracting Authority of the TSIE to be provided and the configuration requirements that



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the Company is aware of for each item of TSIE for the IP communications infrastructure network. The timescale for notification shall be in accordance with Section 3.1.4.

- 4.1.8 The Contracting Authority shall provide all pre-configured IP related Active Equipment required to provide the necessary communication path rules, prior to uplift by the Company from TSS Nominated TSIE Store.
- 4.1.9 The Company shall assemble, install, connect, test and commission the Active Equipment complete with internal and, where appropriate, external communications cabling and terminations onto the Passive Network.
- 4.1.10 The Company shall take cognisance of the commissioning requirements for some items of TSE, and the necessity for involvement of TSS providers at some stages of the commissioning process. The Company shall liaise with TSS providers to ascertain the exact requirements and integrate such involvement into their commissioning programme.
- 4.1.11 To prevent potential damage to environmentally sensitive components, Active Equipment shall not be installed on Site unless it can be connected to an electrical power supply (in accordance with Clause 1508A of the Specification) within eight hours of arrival at the location on Site where the Active Equipment is to be installed.
- 4.1.12 The Company shall undertake testing of Active Equipment in accordance with Section 10 and the Specification.

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## **5 Passive Network (Roadside Infrastructure)**

### **5.1 General**

- 5.1.1 Passive Network components to be provided by the Company shall include, but shall not be limited to all infrastructure and supporting infrastructure associated with:
- (a) Verge mounted VMS, CCTV cameras, JT cameras, NDS Sites and WIM facilities;
  - (b) Road restraint systems associated with TSE as detailed in Part 2: Section 1.4;
  - (c) Cabinets and foundations;
  - (d) Longitudinal, transverse and local fibre optic communications cables, cable fittings and terminations;
  - (e) Longitudinal, transverse and local cable routing systems between cabinets and equipment including ducting, draw cords, draw chambers, platforms, cable tray and fixings;
  - (f) Vehicle detection inductive loops and associated feeder cable for NDS Sites and WIM facilities;
  - (g) Incoming power supply and all associated power distribution cabling and infrastructure;
  - (h) Mechanical interface components and brackets to enable the Active Equipment to be fixed, aligned and adjusted during its operational life to the Passive Network;
  - (i) Hard landscaping at, and safe access to, each equipment site or group of equipment sites as detailed in Part 2: section 1.4.

### **5.2 Cabinets and Cable Routing**

#### **5.2.1 Cabinets**

- 5.2.1.1 Other than the specific cabinets provided as TSIE, as detailed in APPENDIX A of this Part 3 all other cabinet types required for the New Works shall be provided by the Company.
- 5.2.1.2 Cabinets and ancillary items required for the ITS works shall be provided in accordance with this Part 3 and Clause 1505A, 1508A and 1512A of the Specification.
- 5.2.1.3 The Company shall provide and install all foundations including 610 plinth and skirts and other fixing arrangements for all cabinets and verge mounted TSE in accordance with the NDX1002-00 series of drawings as listed in Appendix 0/4 of the Specification.
- 5.2.1.4 Cabinet types to be issued as TSIE are:
- (a) Electricity Supplier Termination Pillar (TP) for the incoming local electricity supplier's cable head and outgoing circuits to TSE;
  - (b) Traffic Equipment Distribution Pillar (TEDP) for local power supply termination at each TSE site requiring power, local switchgear and outgoing circuits for each item of TSE; and
  - (c) Combined Electricity Supplier Termination and Traffic Equipment Distribution Pillar (TP/TEDP) for termination of the incoming cable from the Electricity Supply Company and distribution to TSE in accordance with the NDX1011 series of drawings as listed in Appendix 0/4 of the Specification.
- 5.2.1.5 Cabinet types to be supplied by the Company are:
- (a) 600(S) cabinet for housing Active Equipment;

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- (b) Fibre optic cable termination pillar (FOTP), a Highways Agency Type 609 cabinet for termination of fibre optic cable.

- 5.2.1.6 Within three months of completion of the Company's IP Infrastructure design detailed in Section 4.1.5, the Contracting Authority will provide generic details that the Company shall use as the basis of his design for the internal layout of cabinets, including cable terminations, internal cable routing and equipment locations to provide a consistent design used throughout the works. The designs shall incorporate the requirements of drawing B1033200/CD/1510/007, the NDX series drawings and shall be agreed with the Contracting Authority.
- 5.2.1.7 At all TSE sites (CCTV, VMS, JTC, NDS, WIM) the Company shall provide a consistent site layout of TSE and hard landscaped features in accordance with the NDX series drawings. Where a consistent layout cannot be provided, the Company shall consult and comply with the requirements of the Contracting Authority.
- 5.2.1.8 Cabinets shall be placed such that doors open freely and there is sufficient space between and around cabinets for safe working. The Company shall design the site layout of the Passive Network to achieve a consistent approach throughout the Site in compliance with this Part 3, the Specification and Part 2.
- 5.2.1.9 To facilitate future upgrades to the TSS all cabinets shall be sized to accommodate a minimum of 4 unit spare capacity. .
- 5.2.1.10 Unless specifically specified elsewhere in this Part 3, cabinets shall be located so that the maximum cable length to any TSE is 50m.
- 5.2.1.11 The Company shall fit out the cabinet internals, inclusive of interconnecting cables, equipment, termination blocks and the like, and undertake pre-installation testing in accordance with Section 10.3 of this Part 3 in the Company's Traffic Scotland Equipment Assembly Point prior to installation on site.

## **5.2.2 Cable Routing Systems**

- 5.2.2.1 Cable routing for TSE shall be installed in a cable management system as follows:
- (a) on above ground supports for Active Equipment;
  - (b) through concrete substructure supports for VMS; and
  - (c) at every other location in a duct management system as described in Section 5.2.3.
- 5.2.2.2 Cable routing shall comply with the following:
- (a) TSE power and fibre optic cables shall be installed within a duct management system or cable management system to form the cable routing system;
  - (b) The cable routing system, detailed in (a) above, shall be physically separated from other power supply systems with a minimum separation of 500 millimetres throughout the New Works where the voltage of other power systems is up to 415 volts and where the other power supply systems are greater than 415 volts, the minimum separation from the copper communications cables shall be a minimum of 2 metres. Where local conditions dictate, the longitudinal ducts may be placed closer for a maximum of 50 metres, but this shall be minimised as far as practicable, and each occurrence shall only be allowed with the prior written agreement of the Contracting Authority.
  - (c) If routes are enclosed, whether utilised or not, they shall be provided with continuous draw cords secured between the chambers;

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- (d) Cable routing systems shall be installed so as to run parallel to the relevant adjacent road;
- (e) Transverse cable routing shall be perpendicular to the relevant road; and
- (f) Cable routing systems shall be continuous in one verge of the carriageway along the full length of the New Works.

5.2.2.3 The Company shall ensure the continuity of the cable routing systems at their interface with Structures are not compromised during the construction of roads and Structures, for example at bridge foundations. The Company shall ensure:

- (a) Correct alignment of the cable routing systems within the Structure foundation;
- (b) Installation of required draw cords within the cable routing systems within the Structure and its associated chambers;
- (c) Provision of smooth cable routing systems with an appropriate bending radius to avoid damage to cables within the Structure foundation;
- (d) Continuity of cable routing systems through Structure components such as abutments, expansion joints and interfaces; and
- (e) Provision of leak proof joints such that spoil (e.g. from resin, grouting, mortar, silt and the like) shall not migrate into the duct to create any blockage (permanent or otherwise) of the duct route.

5.2.2.4 Cable restraint and support systems shall be provided for above ground cable management systems in accordance with Clause 1507. Where cable management systems span mechanical or expansion joints the cable management system and cables shall be designed and installed to prevent additional strain to the cable restraint mechanism or damage to the integrity of the cable.

5.2.2.5 At all VMS foundations the cable routing system shall be cast in the concrete foundation in accordance with Section 5.2.2.3. Above ground cable management systems shall not be permitted.

### **5.2.3 Ducting and Chambers for Roads**

5.2.3.1 The Company shall provide underground ducting and chambers for TSE cable networks in accordance with the New Works Requirements, the NDX1063 series of drawings, as listed in Part 4: Appendix 0/4, and Clause 1530A of the Specification to provide an integrated duct network.

5.2.3.2 The Company shall provide, install and test the ducts, duct network and duct chambers for TSE in accordance with Clauses 1507A, 1530A, 1531A, 1532A and 1533A of Schedule 2: Part 4 and additionally the requirements of this Part 3.

5.2.3.3 Type A, B, C and D chambers are specified in Clause 1532A of the Specification.

5.2.3.4 The Company shall provide all necessary ducts, chambers and draw cords to complete the works which link TSE on all relevant roads and in accordance with the following minimum criteria:

- (a) Four, 100 millimetre internal diameter, longitudinal communication ducts within one verge throughout the site and slip road verges. Where TSE is located in the opposite verge from the longitudinal communication ducts, four, 100 millimetre internal diameter, transverse communication ducts shall be provided to cross the carriageway to the TSE in the opposite verge.;
- (b) Where the longitudinal communication ducts cross a Slip Road four, 100 millimetre internal diameter, transverse communication ducts shall be provided;

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- (c) Two, 150 millimetre internal diameter power ducts to distribute power supply cables between the TSE and the incoming power supply point;
- (d) Four 100 millimetre, internal diameter, transverse communication ducts, and two 150 millimetre, internal diameter, transverse power supply ducts, shall be provided as required at a maximum spacing of 1500m to cross the carriageway on all new Trunk Roads.;
- (e) Ducts shall not be installed where existing trees, shrubs and the like may have an impact on the future integrity of the ducting;
- (f) Type A chambers in both verges at each transverse duct location, and at each TSE site;
- (g) Type C chambers at each 600(S);
- (h) Additional intermediate Type A chambers between transverse ducts at a maximum distance of 250 metres;
- (i) Additional Type A chambers at locations where any changes of direction, road crossings or level changes of the duct installation occur including entry to and egress from any Structures;
- (j) Type D loop detector chambers at each NDS site where sub-surface loops are installed and jointed to loop feeder cables;
- (k) Additional chambers and local 100 millimetre diameter ducts at each TSE site to interconnect all TSE chambers and ducts to provide a cable route between all TSE at each site; and
- (l) Chambers shall not be installed on the slope of embankments unless an appropriate level area of hard landscaping is provided for cable installation and future maintenance.

5.2.3.5 Two of the ducts provided under Section 5.2.3.4 (a), (b) and (d) shall be used by the Company whilst the other two ducts shall be kept available for use by Transport Scotland as a continuous and empty route throughout the Site in accordance with the Specification.

5.2.3.6 The Company shall provide marker tape for the cable routing systems in accordance with Clause 1511A of the Specification.

5.2.3.7 Where existing ducting is to be used the Company shall assess the suitability, availability and serviceability of such ducting to be included within the New Works. The Company shall undertake suitable testing to demonstrate to the Contracting Authority that the duct is acceptable for reuse.

5.2.3.8 The ducting and chambers shall provide an integrated network of routes that efficiently inter-connect TSE.

#### **5.2.4 Transmission Stations**

5.2.4.1 The communication link between the TSNCC and the local communication network detailed in Section 5.2.5 shall be facilitated by two third party communication links that are compatible with the Traffic Scotland Service network. These links shall connect to the local communication network through the provision of two transmission stations, which shall be located within the LMA and close to the cable infrastructure of the third party communication link provider to form a resilient network. The location of the transmission stations and route of the links shall form part of the Company's New Works design.

5.2.4.2 The Company shall provide the links and all associated equipment and ascertain the third party communication link provider's requirements for their equipment environmental

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conditions; maintenance requirements; power, including power back-up and security and incorporate these requirements in to the design.

5.2.4.3 The Contracting Authority will provide pre-fabricated transmission station enclosure buildings , complete with heating and ventilation/ air conditioning; lighting and internal power; lockable door; intruder alarm; server racks; power termination and cable termination. The design of the enclosure building will be undertaken by the Contracting Authority based on the Company's New Works design. The enclosure will have a minimum plan area of 4.0m x 2.5m. The Company shall:

- (a) liaise with the Contracting Authority regarding the final design of the enclosure building;
- (b) provide the enclosure building foundations, fixing arrangements, hard landscaping, cable routing and landscaping;
- (c) provide site access to the Contracting Authority specialist contractor to deliver, fix in place and waterproof the enclosure building;
- (d) provide, connect, test and certify permanent power supply to the building within 12 hours of the enclosure building being fixed into position; and
- (e) install and terminate the third party links and associated equipment within the enclosure building.

5.2.4.4 The Company shall consult and comply with the requirements of the Contracting Authority on the location and design of the transmission stations. The Company shall allow six months lead in time for the procurement of the enclosure building by the Contracting Authority, following completion of the design detailed in section 5.2.4.3 (a).

### **5.2.5 Cable Network and Connections**

5.2.5.1 The cable network and connections shall form a communications system that collects, distributes and controls the movement of all data and video between the TSNCC and each item of TSE within and outwith the Site. The cable network and connections form part of the Passive Network while the switches and routing devices are part of the Active Network. The communications system radiates from transmission stations generally located at strategic junctions on the road network.

5.2.5.2 The Company shall comply with the requirements in this Part 3 and Clauses 1506 and 1507A of the Specification with regard to the provision, use and installation of fibre optic, multi-pair communications and loop feeder cables within the New Works Site and communications circuits connected through the Site.

5.2.5.3 The Company shall comply with the requirements in this Part 3 and Clauses 1507A, 1513A and 1514A of the Specification with regard to the termination, jointing and connection of multi-pair communications and loop feeder cables within and connected to the Site.

5.2.5.4 The Company shall comply with the requirements in this Part 3 and Clauses 1507A, and 1515A of the Specification with regard to the termination, jointing and connection of fibre optic cables within the Site and communications circuits connected through the Site.

5.2.5.5 The Company shall comply with the requirements in this Part 3 and Clauses 1507A, and 1516A of Schedule 2: Part 4 with regard to the termination, jointing and connection of power cables within the Site and communications circuits connected through the Site.

5.2.5.6 The cable types to be supplied, installed, tested and commissioned by the Company for use in cable routing systems in this Contract shall be:

- (a) armoured 24 fibre single mode to Transport Wales Specification WOEM 4421;

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- (b) armoured feeder cable for inductive loop detectors to Highways Agency Technical Requirement Specification TR 2031;
- (c) inductive loop detector cable to specification Highways Agency Technical Requirement Specification TR 2029;
- (d) armoured power cable, three core XLPE/SWA/PVC to BS 5467; and
- (e) all specialist TSE cable types as necessary to satisfy these New Works Requirements in relation to the installation of TSE.

5.2.5.7 Not Used

5.2.5.8 The Company shall consult and comply with the requirements of the Contracting Authority to connect / disconnect cables, transmission paths or lasers.

5.2.5.9 Communications cables shall not be installed in longitudinal or transverse power ducts.

5.2.5.10 Not Used.

5.2.5.11 The Company shall provide a single cable network comprising of up to 24 cores of fibre cable as follows:

- (a) in one verge of the carriageway of the AWPR/B-T from Stonehaven Junction to Tippetty Junction;
- (b) in one verge of the carriageway of the AWPR/B-T from Cleanhill Junction to Charleston Junction;
- (c) in one verge of the carriageway of existing routes to connect TSE; and
- (d) in transverse carriageway crossings to connect TSE.

5.2.5.12 At joint locations where the fibre optic cable does not require termination, the joint shall be a fusion splice type.

5.2.5.13 The Company shall provide up to 24 fibre optic spur cables between a Fibre Optic Termination Pillar (FOTP) and a remote location where a fibre connection is required.

5.2.5.14 The third party communication links between the transmission stations and the TSNCC to be provided by the Company shall:

- (a) be compatible with the Traffic Scotland Service network;
- (b) be resilient from each other and from the network being installed within the project, such that the failure of one link will not impact upon the other link;
- (c) connect to the TSNCC via two separate core switch locations to be identified by the Company through consultation with the Contracting Authority;
- (d) have a minimum capacity of 1GB each link; and
- (e) be tested, and commissioned by the Company in accordance with Section 10 and handed over to the Contracting Authority who shall make all arrangements for the ongoing lease of the links. The Company shall consult and comply with the requirements of the Contracting Authority on the details required by the third party supplier for the ongoing lease of the links.

5.2.5.15 The Company shall, as a minimum, install in the verge of the cable network as detailed in 5.2.5.11, fibre optic cables supplying up to 24 fibre cores, through the duct network to form a longitudinal optical fibre network to support local connection to TSE in each verge. The fibre optic cable shall be terminated at a maximum interval of 1500 metres in FOTPs located in the verge coincident with other TSE. This distance may be extended with the written approval of the Contracting Authority.

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- 5.2.5.16 The Company shall provide as required, multi-pair copper (and any other specialist required cables) cabling from the 600(S) to individual items of TSE.
- 5.2.5.17 Not Used.
- 5.2.5.18 All fibre optic and copper terminations shall be above ground and within termination cabinets. Underground joints shall not be permitted except within loop chambers for connection of loop cables to loop feeder.
- 5.2.5.19 The Company shall liaise with the Contracting Authority to obtain up to date fibre optic cable allocations for both used and unused pairs and fibres. A minimum of eight fibres shall remain unused and as a continuous path, from end to end. All spare fibres shall be spliced to form a continuous circuit between transmission stations.

### **5.3 Power Supply Network and Connections**

- 5.3.1 The Company will provide an independent 230 volts single phase electrical supply from the Electricity Supply Company to all new sites as detailed within the Design. The power supply provided will be located on the trunk road network boundary fence line, to be terminated in a TP that will not exceed a distance of 100 metres from the TP to the TSE Site. The Company shall specify and order the TP from the Contracting Authority, and install it in the final location on the trunk road network boundary fence line in advance of the Electricity Supply Company installing the power cable.
- 5.3.2 The Company shall provide the power distribution network from the TP to the TSE site.
- 5.3.3 The Company shall monitor the Electricity Supply Company progress and work with and support them in the delivery of all required power supplies from the Effective Date.
- 5.3.4 The Company shall where necessary, provide, purchase and upgrade existing power supplies required for the completion of the New Works. Any diversions of existing power supplies required shall be the responsibility of the Company.
- 5.3.5 At all TSE sites that require an electricity supply the Company shall provide a point of electrical isolation physically separated from the TSE cabinet but not more than 20 metres distance from the cabinet. ,
- 5.3.6 With specific written approval from the Contracting Authority and based on a justification report by the Company the longitudinal distribution of private power supply network may be increased to a maximum of 250 metres from the Electricity Supply Company's cable head to the furthest item of connected TSE.
- 5.3.7 Provision of power supplies and associated cabinetry shall be in accordance with NDS 9551 and NDS 9565.
- 5.3.8 The Contracting Authority shall supply the power supply cabinets, complete with the associated internal fittings and switchgear, as detailed in APPENDIX A of this Part 3. The Company shall submit to the Contracting Authority the required ratings of the internal switchgear and protective devices necessary to ensure the New Works are compliant with BS 7671: Requirements for Electrical Installations. For each power supply the Company shall prepare circuit designs and calculations and complete an Order Package Configuration Sheet, in accordance with NDS 9565. This shall be submitted to the Contracting Authority at least three months prior to the Company's request to release any TSIE in accordance with Section 3.2.8;
- 5.3.9 All TSE shall be earthed and bonded in accordance with Clause 1517A of the Specification.



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- 5.3.10 The earth fault disconnection time of all circuits supplying TSE shall be a maximum of 0.4 seconds.
- 5.3.11 The Company shall ensure the incoming Electricity Supply Company's cable is terminated in a TP or TP/TEDP for isolation and distribution of outgoing circuits to TSE as specified in Clause 1508A of the Specification and the NDX 1011 series of drawings, as listed in Appendix 0/4 of the Specification. The TP shall be located so that the Electricity Supply Company staff can access the equipment safely without requiring access to the trunk road network or supervision from the trunk road maintenance organisation.
- 5.3.12 The Company shall provide the design, cabling, testing and completion certificates associated with the new, upgraded or amended power supply network and its distribution to the TSE in accordance with BS 7671: Requirements for Electrical Installations.
- 5.3.13 Power cables shall not be installed in the longitudinal or transverse communication ducts.
- 5.3.14 The Company may utilise any existing power supply network to TSE within and adjacent to the Site where compliance with BS 7671 and the Electricity at Work Regulation 1989 can be achieved. The Company shall upgrade the existing power supply network and associated supply / distribution cabinets as required to make such existing power supply networks equivalent to the standard detailed in this Section 5.
- 5.3.15 Notwithstanding the requirements of Section 5.3.1, for remote standalone TSE sites the Company shall consider sustainable sources of power as an alternative to electricity supplied from the Electricity Supply Company. The Company shall consult and comply with the requirements of the Contracting Authority with regard to alternative power provision to TSE.
- 5.3.16 The Company shall ensure that the power distribution network can accommodate the power consumption requirements for the TSIE as detailed in Table 1 and the requirements of Sections 5.3.18 and 5.3.19. An additional allowance of twenty five per cent of the total power supply to each TSE site shall be provided for future upgrades to the TSS.

**Table 1 TSE Power Loading**

| <b>Equipment</b>                                        | <b>Design Value<br/>(Watts)</b> |
|---------------------------------------------------------|---------------------------------|
| CCTV Camera (Heater on and PTZ running)                 | 460W                            |
| TMU                                                     | 5W                              |
| MPC4                                                    | 70W                             |
| JT Camera                                               | 30W                             |
| Ethernet Switch                                         | 40W                             |
| DSL Modem                                               | 20W                             |
| 600(S) cabinet (with test socket allowance)             | 880W                            |
| Roadside Controller (" <b>RSC</b> ")                    | 25W                             |
| Offset T MS4VMS (Full display with all Heaters/Fans On) | 4000W                           |
| 6x23 MS4VMS (Full display with all Heaters/Fans On)     | 6000W                           |
| UPS (for network equipment)                             | 800W                            |

- 5.3.17 The Company shall provide all necessary alteration and / or modification of existing electrical circuits to complete the New Works.

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- 5.3.18 The Company shall provide two spare 6 amp circuits available at TEDP cabinets, and 600(S) cabinets.
- 5.3.19 The Company shall provide a single socket outlet for connection of portable apparatus to facilitate testing and maintenance within each 600(S) cabinet.
- 5.3.20 In the event that any new, upgraded or amended circuit fails an inspection or test, the Company shall carry out works necessary to achieve the requirements of BS 7671: Requirements for Electrical Installations. The Company shall operate under a 'Permit to Work' system when implementing any such changes to circuits.
- 5.3.21 Not Used.
- 5.3.22 The Company shall ensure provision of the power supply before installation of any Active Equipment in accordance with Clause 1508 of the Specification. The Company shall ensure this supply will continuously power the Active Equipment from the time of installation. The Company shall ensure that power supplies are made permanent before commencement of any site based testing or commissioning as described in Section 10, unless otherwise agreed in writing with the Contracting Authority. The Company shall ensure that any temporary power supplies provided are suitable for use with sensitive electronic equipment and provide continuous operation of the TSS at all times. The Company shall monitor and record the performance of the power supply, immediately rectifying any failures and shall record the Company's attendance and repair times for each and every occurrence of power failure, submitting to the Contracting Authority such time records of power failure within twenty four hours of the failure occurring.

#### **5.4 Hard Landscaping**

- 5.4.1 The Company shall provide hard landscaping for all TSE sites with Active Equipment including vehicle, pedestrian and maintenance access as detailed in Schedule 2: Part 2 and Clause 1539A of the Specification so that maintenance access can be facilitated without the need for temporary traffic management. Where practicable the Company shall provide maintenance access from side roads for TSE sites.

#### **5.5 Location and Installation of Traffic Scotland Equipment**

- 5.5.1 Not used

##### **5.5.2 Closed Circuit Television Facilities**

- 5.5.2.1 The Contracting Authority shall supply the CCTV equipment detailed in APPENDIX A of this Part 3 as TSIE for installation by the Company.
- 5.5.2.2 The Company shall install CCTV facilities and equipment in accordance with this Part 3 and Clause 1534 of the Specification to provide total coverage of the Trunk Roads at Junctions to the TSNCC from cameras mounted a maximum of 15m above carriageway level. The required level of coverage shall be achieved through the use of Pan, Tilt and Zoom (PTZ) functionality and shall be sufficient to allow the TSNCC operators to view traffic flow conditions and incidents. The CCTV design shall assume the maximum viewing distance of cameras is 500m.
- 5.5.2.3 The Company shall provide CCTV facilities as detailed in Table 2. .

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**Table 2 CCTV Provision**

| <b>CCTV Facilities</b>                        |                                          |
|-----------------------------------------------|------------------------------------------|
| <b>Junction</b>                               | <b>Minimum Quantity at this Location</b> |
| Stonehaven Junction                           | CCTV 1                                   |
|                                               | CCTV 2                                   |
| Charleston Junction                           | CCTV 3                                   |
|                                               | CCTV 4                                   |
|                                               | CCTV 5                                   |
| Cleanhill Junction                            | CCTV 6                                   |
| Milltimber Junction                           | CCTV 7                                   |
|                                               | CCTV 8                                   |
| South Kingswells Junction                     | CCTV 9                                   |
|                                               | CCTV 10                                  |
| North Kingswells Junction                     | CCTV 11                                  |
| Craibstone Junction                           | CCTV 12                                  |
|                                               | CCTV 13                                  |
|                                               | CCTV 14                                  |
| Goval Junction                                | CCTV 15                                  |
|                                               | CCTV 16                                  |
| Blackdog Junction                             | CCTV 17                                  |
|                                               | CCTV 18                                  |
| Balmedie Junction                             | CCTV 19                                  |
|                                               | CCTV 20                                  |
| Newburgh Road Junction                        | CCTV 21                                  |
|                                               | CCTV 22                                  |
| Tipperty Junction                             | CCTV 23                                  |
|                                               | CCTV 24                                  |
| <b>Total Minimum Quantity of CCTV Cameras</b> | <b>24 No.</b>                            |

- 5.5.2.4 All CCTV equipment shall be of PTZ configuration.
- 5.5.2.5 The Company shall undertake a visibility survey of the CCTV coverage provided by the facilities detailed in Table 2. Should the survey demonstrate that the requirements of Section 5.5.2.2 are not achieved the Company shall consult and comply with the Contracting Authority with regard to satisfying the requirements.
- 5.5.2.6 The Company shall submit to the Contracting Authority evidence to confirm that the requirements of Section 5.5.2.2 can be achieved and also the extent of the coverage from each camera prior to undertaking any CCTV works.

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5.5.2.7 The Company shall submit to the Contracting Authority not less than three months from the date of requirement of CCTV equipment the length of prefabricated composite interconnecting cables required to allow connection between the CCTV and the TSE cabinet.

5.5.2.8 Not Used

5.5.2.9 For CCTV cameras located at standalone sites, the Company shall:

- (a) provide the camera mast that incorporates an electrically operated lowering head and allows the camera to be locked in its operating position. The mast shall be an equal equivalent to the masts used extensively in the TSS and allows a steady, stable image to be captured, without sway of the camera;
- (b) provide the mast foundation, hard standing and TSE cabinets and associated interconnecting ducts;
- (c) provide safe access and defined working area to allow attendance at the site by operatives;
- (d) install the camera mast on the foundation;
- (e) provide a 6A capable 110V electrical outlet within 10m of the base of the CCTV mast to facilitate the maintenance operatives electrical means of lowering and raising the CCTV camera;
- (f) install the camera and PTZ unit on the top of the mast;
- (g) provide the power, communications and fibre cables from the standalone CCTV site to the power distribution and longitudinal communications cables;
- (h) install the prefabricated composite interconnecting cables between the CCTV camera housing on the mast and the base station unit within the TSE cabinet; and
- (i) test and commission the installation to prove the complete CCTV installation in accordance with Section 10.

5.5.2.10 Typical layout and connection details for a CCTV site are shown on drawing B1033200/CD/1510/001.

5.5.3 Not used

#### **5.5.4 National Traffic Data Service Vehicle Detection Facilities**

5.5.4.1 The Contracting Authority shall supply the NDS equipment detailed in APPENDIX A of this Part 3, for installation by the Company.

5.5.4.2 The Company shall install the Data Service equipment within the links detailed in Table 3a. At these locations loop arrays shall be installed in each lane of both carriageways and ideally located at the approximate mid-point of a link where free flowing traffic flows are anticipated.

**Table 3a National Traffic Data Service – Mainline**

| <b>Ref.</b> | <b>Link</b>                         |
|-------------|-------------------------------------|
| NDS 1       | Cleanhill - Milltimber              |
| NDS 2       | Milltimber – South Kingswells       |
| NDS 3       | South Kingswells – North Kingswells |
| NDS 4       | North Kingswells to Craibstone      |

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| Ref.                                              | Link                        |
|---------------------------------------------------|-----------------------------|
| NDS 5                                             | Craibstone to Goval         |
| NDS 6                                             | Goval to Blackdog           |
| NDS 7                                             | Cleanhill to Charleston     |
| NDS 8                                             | Blackdog - Balmedie         |
| NDS 9                                             | Newburgh Road - Tipperty    |
| NDS10                                             | Tipperty – Ellon Roundabout |
| <b>Total Quantity of NDS Mainline Sites 10No.</b> |                             |

5.5.4.3 The Company shall install NDS equipment to allow monitoring of all traffic entering and leaving the trunk road network. Loop arrays shall be located within all lanes of the slip roads at the junctions identified in Table 3b.

**Table 3b National Traffic Data Service – Slips**

| National Traffic Data Service - Slips    |                 |                                      |
|------------------------------------------|-----------------|--------------------------------------|
| Ref.                                     | Junction        | Minimum Slip Road loops              |
| NDS 11                                   | Stonehaven      | 4x Slip Roads                        |
| NDS 12                                   | Milltimber      | 4x Slip Roads                        |
| NDS 13                                   | South Kingswell | 4x Slip Roads                        |
| NDS 14                                   | Craibstone      | 4x Slip Road<br>5x on A96 Roundabout |
| NDS 15                                   | Goval           | 4x Slip Roads                        |
| NDS 16                                   | Blackdog        | 4x Slip Roads                        |
| NDS 17                                   | Charleston      | 4x Slip Roads                        |
| NDS 18                                   | Balmedie        | 4x Slip Roads                        |
| <b>Total Quantity of NDS Slips Sites</b> |                 | <b>8 No.</b>                         |

5.5.4.4 At NDS sites the Company shall ensure that the loop cable from the TSE cabinet along the verge to the Type D chamber for the vehicle inductive loops is no greater than 200 metres.

5.5.4.5 The Company shall allow witnessing of works associated with the NDS sites by the Contracting Authority in accordance with the timescales set out in section 3.1.4 to comply with this requirement.

5.5.4.6 The Contracting Authority will provide the initial configuration of the TMUs. The Company shall carry out the calibration and any further adjustments of each site during peak and off peak traffic flow conditions to determine the necessary adjustments to the initial configurations. This shall be achieved through testing and fine tuning of the equipment at the following intervals:

- (a) during initial commissioning prior to operational handover and road opening to Users;
- (b) between 14 and 28 days following the opening of the road to Users; and
- (c) between 112 and 140 days following the opening of the road to Users.

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5.5.4.7 Not Used

5.5.4.8 Not Used.

5.5.4.9 The Company shall provide NDS equipment in accordance with the requirements of this Part 3 and Clauses 1537A, 1536A, and 1549A of the Specification.

5.5.4.10 For each Data Service site the Company shall:

- (a) provide the vehicle inductive loops in accordance with MCH1540 with the exception that the loops shall be installed below the surface course prior to laying of the surface course on newly constructed or resurfaced roads (i.e. saw cutting of the surface course shall not be permitted);
- (b) install and terminate loop cables into the TSE cabinet;
- (c) install the TMU and associated interconnection cables in the TSE cabinet; and
- (d) test and commission the installation to prove the complete Data Service installation in accordance with Section 10.

5.5.4.11 Typical layout and connection details for an NDS site are shown on drawing B1033200/CD/1510/002

**5.5.5 Weigh-in-Motion**

5.5.5.1 The Contracting Authority shall supply the Weigh-in-Motion equipment detailed in Appendix A for installation by the Company.

5.5.5.2 The Company shall install WIM facilities and equipment in accordance with the requirements of this Part 3, drawing number NDX1097-01 and the Specification Clause 1549A.

5.5.5.3 The Company shall install WIM sites at the locations detailed in Table 4.

**Table 4 – Weigh in Motion Locations**

| Ref.                                   | Link                              |
|----------------------------------------|-----------------------------------|
| WIM 1                                  | Stonehaven - Cleanhill            |
| WIM 2                                  | Balmedie – Newburgh Road Junction |
| <b>Total Quantity of WIM Sites 2No</b> |                                   |

5.5.5.4 For each new WIM site the Company shall:

- (a) provide the vehicle inductive loops in accordance with MCH1540 in each carriageway with the exception that the loops shall be installed below the surface course prior to laying of the surface course on newly constructed or resurfaced roads (i.e. saw cutting of the surface course shall not be permitted); ;
- (b) install the piezo electric sensors in each carriageway;
- (c) install and terminate loop cables and screened sensor cables directly into the TSE cabinet;
- (d) provide power to the TSE;
- (e) install the WIM control unit and associated communications equipment and interconnection cables in the TSE cabinet; and
- (f) test and commission the installation to prove the complete WIM facility installation in accordance with Section 10, including calibration of the sensors using Heavy Goods Vehicles of a known weight as provided by Transport Scotland.

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5.5.5.5 The specialist screened sensor cable is supplied in 50m or 75m lengths as TSIE. The Company shall advise the Contracting Authority of the length of specialist screened sensor cable required for the installation not less than three months from the date that the cables are required.

5.5.5.6 Typical layout and connection details for a WIM site are shown on drawing B1033200/CD/1510/003

### 5.5.6 Variable Message Sign Facilities

5.5.6.1 The Contracting Authority shall supply the Cantilever VMS and Offset-T VMS complete with support structures and Ambient Light Monitoring (ALM) equipment detailed in Appendix A of this Part 3, for installation by the Company.

5.5.6.2 The Company shall install VMS facilities and equipment in accordance with the requirements of this Part 3 and Clause 1535A of the Specification. The Company shall consult and comply with the requirements of the Contracting Authority over works planning; staff competencies; method of work; lifting plans and hold and witness points.

5.5.6.3 The Company shall install VMS in accordance with the following criteria:

- (a) at the locations and with the sign type detailed in Table 5;
- (b) normally 1 mile in advance of the network route decision points (e.g. junctions/ auxiliary lanes) although the final location shall take cognisance of land availability, other infrastructure constraints and environmental impacts;
- (c) integrated with the Traffic Signs and Road Marking Design to convey a clear and concise messaging/ signing strategy to Users; and
- (d) each VMS shall be visible to any User 300 metres or more upstream of the VMS, and shall not be obscured by other road infrastructure, trees or shrubs.

**Table 5 – Variable Message Sign Facilities**

| Variable Message Sign Facilities |            |                                                                                                     |
|----------------------------------|------------|-----------------------------------------------------------------------------------------------------|
| Ref.                             | Sign Type  | Location                                                                                            |
| VMS 1                            | Cantilever | A90 - Northbound Approach to Stonehaven Junction.<br>(Decision Point Northbound – Fastlink / A90).  |
| VMS 2                            | Cantilever | A90 - Northbound Approach to Charleston Junction.<br>(Network Information – Southern Leg / A90)     |
| VMS 3                            | Cantilever | Northbound Approach to Cleanhill Junction<br>(Decision Point North / East – Southern Leg)           |
| VMS 4                            | Cantilever | Southbound Approach to Cleanhill Junction<br>(Decision Point South / East – Southern Leg)           |
| VMS 5                            | Cantilever | Northbound Approach to Craibstone Junction<br>(Decision Point North / East – A96 / Northern Leg)    |
| VMS 6                            | Cantilever | A96 Eastbound Approach to Craibstone Junction<br>(Decision Point North / East – A96 / Northern Leg) |
| VMS 7                            | Cantilever | A90 - Southbound Approach to Blackdog Junction<br>(Decision Point Southbound – Northern Leg / A90). |
| VMS 8                            | Offset-T   | A96 - Westbound to Craibstone Junction                                                              |

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| <b>Variable Message Sign Facilities</b> |                  |                                                                                           |
|-----------------------------------------|------------------|-------------------------------------------------------------------------------------------|
| <b>Ref.</b>                             | <b>Sign Type</b> | <b>Location</b>                                                                           |
|                                         |                  | (Network Information – North / South)                                                     |
| VMS 9                                   | Offset-T         | A90 - Southbound Approach to Charleston Junction<br>(Decision Point – Southern Leg / A90) |
| VMS 10                                  | Offset-T         | Westbound Approach to Charleston Junction<br>(Decision Point – Southern Leg / A90)        |
| VMS 11                                  | Offset-T         | A90 – Northbound Approach to Newburgh Road junction -<br>Stoneyards (Decision Point)      |
| <b>Total Quantity of VMS</b>            |                  | <b>11 No.</b>                                                                             |

5.5.6.4 Not Used

5.5.6.5 Not Used

5.5.6.6 For each VMS facility the Company shall:

- (a) install the VMS sign on the TSIE provided support frame and post;
- (b) provide access, and associated brackets, fixings and cable management systems;
- (c) provide appropriate fixing arrangements between the foundation and structure , and between the structure and the TSIE;
- (d) provide, install and terminate interconnecting power and communication cables between the VMS and the TSE cabinet as necessary;
- (e) ensure that the VMS is aligned for optimum visibility by Users; and
- (f) test and commission the installation to prove the complete VMS installation in accordance with Section 10.

5.5.6.7 The existing northbound cantilever VMS on the A90 at Pitmillan is to be removed in accordance with Section 3.3.

5.5.6.8 Typical layout and connection details for a VMS site are shown on drawing B1033200/CD/1510/004.

5.5.7 Not Used

5.5.8 Not Used

**5.5.9 Journey Time Facilities**

5.5.9.1 The Contracting Authority shall supply the JT equipment detailed in APPENDIX A of this Part 3, for installation by the Company.

5.5.9.2 The Company shall take cognisance of the two types of JT equipment, Type A and Type B. The Company shall install JT facilities and equipment in accordance with the requirements of this Part 3 and the Specification.

5.5.9.3 JT facilities Type A shall be provided by the Company at each major network node/ junction to allow the journey time to be measured on each link as detailed in Table 6. JT facilities Type A shall be pole mounted and located in pairs in the verge of each carriageway.



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**Table 6a – Journey Time Facilities Type A**

| <b>Journey Time Facilities Type A</b>    |                         |                                         |
|------------------------------------------|-------------------------|-----------------------------------------|
| <b>Ref.</b>                              | <b>Link</b>             | <b>Location</b>                         |
| JT 1                                     | Stonehaven - Cleanhill  | North of Stonehaven Junction            |
| JT 2                                     | Stonehaven - Cleanhill  | South of Cleanhill Junction             |
| JT 3                                     | Cleanhill - Craibstone  | South of Craibstone Junction            |
| JT 4                                     | Craibstone to Blackdog  | South of Blackdog Junction              |
| JT 5                                     | Cleanhill to Charleston | West of Charleston Junction             |
| JT 6                                     | Blackdog to Tipperty    | South of Tipperty Junction (Stoneyards) |
| <b>Total Quantity of Type A JT Sites</b> |                         | <b>6 No.</b>                            |

5.5.9.4 The mounting arrangement for Type A JT facility shall be adjustable in the horizontal and vertical planes so as to allow the JT cameras to be focused on the centre of the lane(s) to be monitored. The mounting pole shall be capable of being lowered to allow maintenance access to the cameras.

5.5.9.5 Not Used.

5.5.9.6 Not Used

5.5.9.7 For each Type A JT equipment site, the Company shall:

- (a) submit to the Contracting Authority not less than three months from the date of requirement of JT equipment the lengths of JT interconnecting power and communication cables required to allow connection between the pole mounted JT equipment and the TSE cabinet;
- (b) install and terminate interconnecting power and communication cables between the TSIE and the TSE cabinet;
- (c) install the TSIE and associated interconnection cables; and
- (d) align the cameras, test and commission the installation to prove the complete JT type A installation in accordance with Section 10.

5.5.9.8 JT type B equipment shall be installed above the centreline of each lane on both carriageways at the locations detailed in Table 6b

**Table 6b – Journey Time Facilities Type B**

| <b>Journey Time Facilities Type B</b> |                                             |                                                                                                                 |
|---------------------------------------|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Ref.</b>                           | <b>Location</b>                             | <b>Comments</b>                                                                                                 |
| JT 7                                  | Southern Leg                                | PS31 Hatton Overbridge                                                                                          |
| JT 8                                  | Milltimber Junction                         | PS18 Milltimber Junction Overbridge                                                                             |
| JT 9                                  | Goval Junction                              | PS53 A947 Overbridge                                                                                            |
| JT 10                                 | Blackdog Junction to Tipperty Junction Link | Overbridge to be determined through consultation with Traffic Scotland facilitated by the Contracting Authority |

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| <b>Journey Time Facilities Type B</b> |                                           |                 |
|---------------------------------------|-------------------------------------------|-----------------|
| <b>Ref.</b>                           | <b>Location</b>                           | <b>Comments</b> |
|                                       | <b>Total Quantity of Type B JTC Sites</b> | <b>4 No.</b>    |

5.5.9.9 The incoming data connection of the JT Type B equipment at the Type 600(S) cabinet will be provided by others

5.5.9.10 For each JT Type B equipment site, the Company shall:

- (a) provide upstream facing mounting brackets for a camera and infrared illumination above each lane;
- (b) provide the Type 600(S) cabinet and power distribution cabinet;
- (c) provide cable routing system between the roadside Type 600(S) and the mounting brackets and cameras; and
- (d) test and commission the power installation.

5.5.9.11 Typical layout and connection details for a Type A and Type B JT site are shown on drawing B1033200/CD/1510/005

## **5.6 Equipment Numbering**

5.6.1 The Company shall utilise the TSE numbering when detailing TSE on drawings and documents. The TSE numbering is based on the TSS route chainages and is detailed on drawing B1033200/CD/1510/008.

5.6.2 The Company shall provide numbering for all TSE in accordance with Clause 1519 of the Specification.

## **5.7 Spares**

5.7.1 The Company shall hold in their maintenance stores items of the Passive Network as spare parts as detailed in APPENDIX B of this Part 3.

5.7.2 Stores items shall be replenished within 28 days from when they were removed from the Company's stores.

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## **6 Traffic Signs and Road Markings**

### **6.1 General**

- 6.1.1 The Company shall integrate the VMS design with the traffic signs and road markings provided in accordance with Section 1.9 of Schedule 2 Part 2 that shall provide a coherent and unambiguous signing and messaging system to the road Users.

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**7 Structures****7.1 General**

- 7.1.1 The New Works Requirements for structures associated with the TSE are detailed in Schedule 2: Part 2
- 7.1.2 The Company shall consult and comply with the requirements of the Contracting Authority regarding the size, weight and fixing arrangements of the TSIE.

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**8 Vehicle Restraint Systems**

**8.1 General**

- 8.1.1 New Works Requirements for vehicle restraint systems in regard to TSE are detailed in Schedule 2: Part 2.



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**9 Site Investigations****9.1 General**

- 9.1.1 Trial pits to locate existing TSE shall be undertaken in accordance with Clause 1524A of the Specification.
- 9.1.2 New Works Requirements for geotechnical or other investigations in regard to TSE are detailed in Schedule 2: Part 2.

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## **10 Testing and Certification**

### **10.1 General**

- 10.1.1 Requirements for testing and commissioning are given in Section 10 and in Specification Appendix 0/5 and Appendix 1/5 of Schedule 2: Part 4.
- 10.1.2 Not Used.
- 10.1.3 Not Used.
- 10.1.4 The Company shall undertake the connection of new TSE on to the existing Traffic Scotland Service network in a phased and / or sectional manner to avoid any potential detrimental effect on the performance, operation or stability of the instation software and Active Equipment.
- 10.1.5 The Company shall test and commission all TSE to ensure that all Active Equipment and the Passive Network are commissioned in a stable and controlled manner, minimising the risk associated with connecting devices to the live network supporting the TSS. The Company shall achieve this through a combination of phased testing, physical separation of longitudinal communication networks from existing TSE and also software protection techniques.
- 10.1.6 The Company shall ensure that the risk of Users or the public from being distracted by the testing of light or sound emitting devices is minimised.
- 10.1.7 The Company shall provide to the Contracting Authority a Commissioning, Testing and Inspection Plan (CTIP) that sets out the scope, timescale and responsibility for all connection and disconnection of TSE and testing and commissioning of TSE to complete the New Works. The Company shall consult and comply with the Contracting Authority and Transport Scotland's specialist contractor regarding the layout of the CTIP and the specific testing and commissioning of the communication links including the core switch / distribution switch within the Transmission Station. This shall be included in the Company's CTIP. The Company shall not commence any works associated with this Section 10 until the CTIP is approved in writing by the Contracting Authority. Any comments on the CTIP made by the Contracting Authority shall be incorporated into the Company's CTIP document. The CTIP shall include, but shall not be limited to the method, planning, scheduling and coordination of the following:
- (a) pre-site tests;
  - (b) pre-installation tests;
  - (c) installation tests; and
  - (d) SATs.
- 10.1.8 The CTIP shall contain methods of testing and commissioning and shall be supported by flowcharts, test descriptions and expected test results.
- 10.1.9 The Company shall follow the document template table of content detailed in Appendix G supported by appropriate sections of the installation and test document MCS602 to develop the CTIP.
- 10.1.10 The Company shall consult and comply with the Contracting Authority in creation of the CTIP and ensure that both the Contracting Authority and the Company are satisfied with

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the content not less than three months prior to the commencement of any works associated with this Section 10.

- 10.1.11 The Company shall through implementing the CTIP demonstrate and ensure that the TSE installed in the New Works is fully commissioned and operational from the roadside and TSNCC. The confirmation of unsuccessful and successful testing shall be documented and details made available to the Contracting Authority at the end of each type of test detailed in Section 10.1.7.
- 10.1.12 Where tests are unsuccessful the Company shall undertake investigations to determine the cause of failure and shall notify the Contracting Authority in writing what shall be done by the Company to correct the failure. The Company shall undertake testing, investigation and corrections until tests are successful.
- 10.1.13 When requested in writing by the Company, the Contracting Authority shall provide all reasonable assistance, such as access to the TSNCC and testing and modifications to the TSS system and core network upstream of and including the core switch, as and when required throughout the testing and commissioning process. The notification periods required by the Contracting Authority are detailed in Section 3.1.4.
- 10.1.14 The Contracting Authority will accept back into the Transport Scotland Service Nominated TSIE Store all TSIE notified by the Company as faulty. The faulty TSIE, or part thereof, will be replaced or repaired by the Contracting Authority as detailed in Section 3.2.12.

## **10.2 Pre-Site and On Site Tests**

- 10.2.1 All TSE supplied to the Company as TSIE shall have been subject to appropriate production, factory acceptance and validation testing by the Contracting Authority to confirm that it is of suitable quality and achieves the Contracting Authority's TSE requirements.
- 10.2.2 The Contracting Authority shall also undertake appropriate TSE pre-issue tests prior to releasing the TSE to the Company.
- 10.2.3 The Company may have a representative present at any appropriate TSE pre-issue tests to be undertaken by the Contracting Authority. Any request to attend such testing shall be made in writing to the Contracting Authority at least 28 days prior to the start of any appropriate TSE pre-issue tests. The Company should note that some items of TSE are procured in bulk ahead of time, and for such items it may not be possible for the Company to have a representative present for the pre-issue tests.
- 10.2.4 The Company shall undertake a visual inspection of all TSIE to determine if the equipment is physically damaged. These inspections and subsequent actions if damage is noted shall be undertaken as follows:
- (a) for TSIE uplifted from TSS Nominated TSIE Store the Company shall undertake inspections at the time of uplift. Damage shall be reported to the operator of TSS Nominated TSIE Store where a written record of any damage shall be agreed and recorded with the operator. Depending on the nature of the damage, the operator will determine if the TSIE can be uplifted by the Company for use in the New Works.
  - (b) for TSIE issued from a TSS supplier and delivered to the Site, the Company shall undertake inspections at the time of delivery. If damage is present the Company shall take digital photographs that display the time and date on the image and immediately send by email the photographic evidence of damage to the

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Contracting Authority. The Contracting Authority will determine if the TSIE should be returned to the supplier or if an on-site repair can be undertaken by the TSS supplier. The Company shall document the on-site repairs agreed with the Contracting Authority that require to be undertaken. If on site repairs cannot be undertaken the Company and the Contracting Authority shall jointly agree that the TSIE shall be uplifted by the supplier or immediately returned on the supplier's delivery vehicle.

- 10.2.5 TSIE inspected by the Company in accordance with Section 10.2.4 and not deemed to be satisfactory for including in the New Works shall be repaired or replaced by the Contracting Authority in accordance with Section 3.2.

### **10.3 Pre-installation Tests**

- 10.3.1 At the Company's Traffic Scotland Equipment Assembly Point the Company shall for each item of VMS equipment assemble all equipment and interconnecting cables to form a single combined arrangement prior to pre-installation testing and installation on Site. The pre-installation tests shall be undertaken using the RSC and ALM equipment allocated to the items of VMS equipment being tested.

- 10.3.2 The pre-installation tests shall include a 100 hour soak test of fully connected TSE at the Company's Traffic Scotland Equipment Assembly Point to demonstrate and confirm the correct connection, operation, configuration and compatibility with the communications devices prior to installation on Site. The Company shall advise the Contracting Authority in writing of the dates for these tests for each TSE site at least 14 days prior to the test date.

- 10.3.3 To assist in the pre-installation tests the Contracting Authority will issue a test rig to the Company comprising of a configured multi-purpose controller, housed in a cabinet suitable for the installation of TSIE controlling equipment for the TSE being tested. The Company shall advise the Contracting Authority in writing of the dates on which specific items of TSIE are to be tested not less than one month prior to the commencement of the pre-installation tests, to allow the Contracting Authority to arrange for suitable test software to be available to the Company.

- 10.3.4 Any faulty or non-operational TSIE identified during or at the end of the 100 hour soak test shall be notified within 24 hours to the Contracting Authority and shall either be replaced by the Company with fully functioning TSIE issued by the Contracting Authority, or repaired by the Contracting Authority in accordance with Section 3.2. Under these circumstances the 100 hour soak test shall be repeated so that all TSE has completed testing in accordance with Section 10.3.2.

- 10.3.5 Any faulty or non-operational equipment, other than TSIE, identified during or at the end of the 100 hour soak test shall not be installed on Site and shall be replaced immediately by the Company with fully functioning equipment. Under these circumstances the 100 hour soak test shall be repeated as a complete test.

- 10.3.6 All TSE listed in section 10.3.1 shall be fully tested and demonstrated as fully operational in accordance with the CTIP.

### **10.4 Installation Tests**

- 10.4.1 The Company shall test and commission the Passive Network, including any third party communications links from the transmission stations to the TSNCC.

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- 10.4.2 The Company shall undertake all testing of fibre optic, loop and power cables in accordance with the requirements of this Part 3 and with Clauses 1506A and 1518A of the Specification and Appendix 1/5 of Part 4. The Company shall not undertake testing of sub surface vehicle detection loops until the final pavement surface course works are complete.
- 10.4.3 The Company shall undertake end to end testing of the installed fibre optic and multi-pair cables. The Company shall also test each dedicated link or circuit to each TSE location.
- 10.4.4 The Company shall test ducts and chambers in accordance with Clauses 1533A and 1532A of the Specification.
- 10.4.5 Cabinet installations shall be tested in accordance with Clause 1508A of the Specification and any specific manufacturer supplied testing regimes.
- 10.4.6 Active Equipment shall not be installed within cabinets on Site until permanent power supplies in accordance with Section 5.3 have been installed, tested and certified and all environmental protection such as cabinet seals has been completed and certified.
- 10.4.7 Active Equipment shall not be connected to the Passive Network until all tests for the individual Passive Network components have been successfully completed and certified.
- 10.4.8 All TSE shall be fully tested and demonstrated as fully operational in accordance with the CTIP.
- 10.4.9 Any faulty or non-operational TSIE identified during or at the end of these installation tests shall be notified within 24 hours to the Contracting Authority and replaced by the Company with fully functioning TSIE issued by the Contracting Authority in accordance with Section 3.2.

### **10.5 Site Acceptance Tests (SAT)**

- 10.5.1 The Company shall carry out three stages of SAT after installation of the TSE as follows:
- (a) Standalone SATs on all installed TSE.
- These tests shall demonstrate and provide certification that the TSE is functionally operational locally at each of the individual sites prior to connection to the core communication network.
- (b) Pre-commissioning SATs.
- In addition to the cable tests in accordance with the Specification and prior to connection of the end device Active Equipment onto the existing TSE, the Company shall carry out tests to prove that the IP network links across the Site are continuous and stable. The Company shall carry out testing of the access network from the core switch locations (transmission stations at fibre termination points) prior to connection to the core network.
- (c) Commissioning SATs.
- These tests shall be carried out immediately after connection of the Active Equipment to the existing TSE, and shall demonstrate and provide certification that the Active Equipment has been successfully commissioned with the existing TSE such that it is fully operated and controlled from the TSNCC. As this relies on the TSS's core network and control system, the Contracting Authority shall assist the Company in undertaking the Commissioning SATs in accordance with

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the CTIP. The Contracting Authority will transfer the TSE on to the TSS live network and undertake final integration with assistance from the Company.

- 10.5.2 The extent of standalone and pre-commissioning SATs identified in Section 10.5.1 10.5.1(a) and 10.5.1(b) shall be maximised prior to commencing commissioning SATs identified in 10.5.1 10.5.1(c).
- 10.5.3 The Company shall ensure that the Active Equipment is connected to the existing TSE in a top down manner during SATs. The main core network links in the transmission stations shall be commissioned first, then connections from the core network in transmission stations to the local communications equipment at the roadside cabinets, then connections from the local communications equipment to the roadside equipment.
- 10.5.4 Any faulty or non-operational TSIE identified during or at the end of these SATs shall be notified within 24 hours to the Contracting Authority and shall either be replaced by the Company with fully functioning TSIE issued by the Contracting Authority, or repaired by the Contracting Authority in accordance with Section 3.2.

### **10.6 Standalone SATs**

- 10.6.1 Standalone SATs shall comprise full operational and configuration testing of all TSE at each individual site group but shall be in isolation from the core communications network and Instation. A site group comprises of all TSE at a TSE cabinet site, or a remote site where the TSE is not adjacent to, but is connected to, a TSE cabinet. All TSE shall be tested upstream from the main incoming communications interface using the same infrastructure and network configuration that will be used during operation. The Company shall determine the order of testing, either by site or by function that best fits with the Construction Programme.
- 10.6.2 The Company shall test all TSE for operational functionality and compatibility with all other TSE within the group to confirm the configuration and correct TSE addressing with the design. During local testing, the documentation that will be held within the TSE cabinets shall be verified and corrected where necessary.

### **10.7 Pre-commissioning SATs**

- 10.7.1 In addition to the cable tests in accordance with the Specification and prior to connection of the end device Active Equipment onto the existing TSE, the Company shall carry out tests to prove that the IP network links across the Site are continuous and stable. The Company shall carry out testing of the access network from the core switch locations (transmission stations at fibre termination points) prior to connection to the core network
- 10.7.2 To prevent interaction with existing live devices, the fibres allocated for use within the site shall be distinct from all existing live equipment thereby creating a virtual, independent network for this Contract.
- 10.7.3 Following successful completion of testing and certification the Company shall connect the longitudinal fibre to the core network, under the supervision of the TSS providers.
- 10.7.4 The Company shall ensure that the TSS software configuration of the Active Equipment installed within the Site shall have no adverse impact on the existing live TSE – this may be through the use of De-Militarized Zone (DMZ) or similar protection techniques as detailed in the CTIP.

### **10.8 Commissioning SATs**



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- 10.8.1 After successful completion of the pre-commissioning SATs detailed in Section 10.7, the Company shall complete Commissioning SATs and detection calibration prior to the road opening to Users. The Contracting Authority shall assist the Company in undertaking the Commissioning SATs in accordance with the CTIP by making available the TSS providers.
- 10.8.2 The Company shall undertake testing in accordance with the CTIP of all installed TSE from the TSNCC to demonstrate that the Active Equipment has been successfully commissioned with the existing TSE such that it is operational and controlled from the TSNCC. The Contracting Authority will make available to the Company one workstation to undertake these tests.
- 10.8.3 In the event that the SATs are unsuccessful the Company shall, together with the Contracting Authority, undertake testing and modifications to identify and remedy the cause of the unsuccessful test, as follows:
- (a) The Company shall repeat the testing in Section 10.5.1 and undertake modifications to the TSE downstream of the core switch detailed in Section 10.7 as necessary; and
  - (b) The Contracting Authority will undertake testing and modifications of the TSS system as required.
- 10.8.4 Following any modifications undertaken in accordance with Sections 10.8.3 the Company shall repeat the testing in accordance with Section 10.8.2.

### **10.9 Traffic Scotland Service Integration**

- 10.9.1 Once the Company has successfully completed the Commissioning SATs the Contracting Authority will transfer the TSE across to the TSS live network and undertake final integration with the assistance of the Company. The assistance to be provided by the Company may include, but is not limited to, traffic management, test engineers and fault finding/locating of any faults preventing completion of integration. If required the Company shall either replace faulty TSIE with fully functioning TSIE issued by the Contracting Authority, or assist the Contracting Authority in repairing the faulty TSIE.

### **10.10 Operational Calibration**

- 10.10.1 The Company shall undertake operational calibration of Active Equipment as required to ensure that the TSIE performs in accordance with the relevant design element at various periods after all the Site Roads are open as detailed in Section 5.5.4.6 and the CTIP.

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## **11 Documentation, Training and Handover**

### **11.1 Documentation**

- 11.1.1 The Company shall provide documentation regarding the provision, installation, composition, testing and commissioning of the TSE to allow future operation, maintenance, alteration and demolition by the Contracting Authority or its service providers, agents and third parties.
- 11.1.2 The Company shall comply with the requirements of Clauses 1504A and 1540A of the Specification and submit the TSE documentation for review in accordance with the Certification Procedure in Part 1 and Part 5. The TSE documentation shall follow the document template detailed in Appendix H and shall include, but shall not be limited to, the following information:
- (a) equipment documentation;
  - (b) as-built drawings in AutoCAD ® format to NDS 1624-09;
  - (c) testing and certification documentation;
  - (d) operational, maintenance and service manual; and
  - (e) documentation as required by Highways Agency Specification TR 1100.
- 11.1.3 The Company shall provide the cabling, testing and completion certificates associated with new, upgraded or amended power supply network and its distribution to the TSE in accordance with BS 7671: Requirements for Electrical Installations.
- 11.1.4 In addition to the recording of as-built information as the work progresses the Company shall also provide documentation described in this Section 11 to the Contracting Authority in stages as follows:
- (a) copies of all test certificates within 7 days of completion of each of the testing stages detailed in Section 10.5.1 (a), (b) and (c).
  - (b) a draft set at least 21 days prior to the commissioning period stated in Section 3.5.2;
  - (c) a final draft set prior to the road being open to Users; and
  - (d) the final set in accordance with the Agreement.
- 11.1.5 In compliance with Section 11.1.4 the as-built information shall be collated by the Company in a live document for presenting to the Contracting Authority as an updated set.

### **11.2 Training**

- 11.2.1 The Company shall provide comprehensive training for all Company provided components of the Passive Network that TSS maintainers, installers and operators may use to carry out their duties on TSE. This training shall be tailored to suit each of the following groups:
- (a) management / supervisors / operators;
  - (b) installation, testing and commissioning personnel; and
  - (c) maintenance personnel.
- 11.2.2 The training shall include classroom and site based components as necessary to demonstrate the equipment, procedures and safe handling and shall accommodate six staff in each of the groups detailed in Section 11.2.1.

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- 11.2.3 The Company shall produce training manuals and documentation to be used in the training that will subsequently be incorporated with the documentation of Section 11.1.
- 11.2.4 Successful training shall be provided and completed at least 28 days before the commissioning on Site of any Active Equipment. The Company shall submit to the Contracting Authority a training programme identifying the recommended group of staff to attend and the time periods designated.
- 11.2.5 At the end of the course those trained shall be able to expand, maintain and support the Active Equipment provided by the Company without any on-going support from the Company.
- 11.2.6 The Company shall at the end of the course provide feedback forms for the participants to complete. The Contracting Authority shall review the completed feedback forms to determine if the training has been comprehensive and has been understood by the attendees. Should the Contracting Authority determine that the training has not informed, either in part or in full as appropriate, the Company shall then improve and repeat the training course within 14 days of notification by the Contracting Authority.

### **11.3 Handover**

- 11.3.1 Prior to handover of maintenance responsibility for the ITS Active Equipment to the Contracting Authority, the Company shall:
- (a) complete all installation, testing and commissioning works detailed in this Part 3 to the satisfaction of the Contracting Authority;
  - (b) complete all training in accordance with Section 11.2; and
  - (c) provide two paper and two electronic copies of documentation in accordance with 11.1.4(c)
- 11.3.2 Not less than 14 days prior to the handover of maintenance responsibility the Company shall arrange for accompanied site visits by the TSS maintenance company personnel to highlight the location of TSE and maintenance access arrangements. In advance of the visits, briefing packs consisting of layout plans and instructions shall be prepared by the Company and distributed to the visitors.

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## **12 Programme**

### **12.1 General**

- 12.1.1 In addition to the requirements of APPENDIX E of this Part 3, the Company shall provide a detailed programme for the ITS works to the Contracting Authority within 56 days of the Effective Date for any ITS works being undertaken on Site.
- 12.1.2 The programme for ITS works shall include all appropriate references to these New Works Requirements and shall provide details of:
- (a) submission of TSE design and design data;
  - (b) Passive Network diversions, re-routing or relocation;
  - (c) commencement on site for surveys and preparation;
  - (d) commencement of Temporary Works and each Temporary Works activity;
  - (e) all disconnections and connections to TSE;
  - (f) access to TSNCC or other TS facilities;
  - (g) uplift of all TSIE from the TS nominated store;
  - (h) delivery of all client equipment direct from the supplier;
  - (i) incremental installation of all TSE;
  - (j) testing of all TSE;
  - (k) commissioning of all TSE;
  - (l) power network diversions;
  - (m) order, and completion of individual incoming power supplies from the Electricity Supply Company;
  - (n) requirement for site data or the host systems amendments; and
  - (o) issue of draft and final documentation.

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**APPENDIX A:  
TRANSPORT SCOTLAND ISSUED EQUIPMENT**

**THIS IS APPENDIX A TO PART 3 OF THE NEW WORKS REQUIREMENTS**

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**APPENDIX A**

**TRANSPORT SCOTLAND ISSUED EQUIPMENT**

The following Active Equipment and Passive Equipment components shall be issued by the Contracting Authority on behalf of Transport Scotland for use or installation in the New Works as required:

| <b>Closed Circuit Television (“CCTV”)</b><br>(with reference to Section 5.5.2 of Part 3)                                                          |                                                                           |                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------|
| <b>Item</b>                                                                                                                                       | <b>Company to collect from Transport Scotland’s TSIE Nominated Stores</b> | <b>Issued from Transport Scotland’s Supplier</b> |
| CCTV camera – Monitoring only                                                                                                                     | Yes                                                                       | No                                               |
| Pan, tilt and zoom unit                                                                                                                           | Yes                                                                       | No                                               |
| Local Video base station, RS485 or FSK to Ethernet converter and Ethernet switching equipment as necessary                                        | Yes                                                                       | No                                               |
| All necessary communications interconnecting cables including pre-fabricated, booted, Category 5e Ethernet and fibre patch leads within cabinets. | Yes                                                                       | No                                               |

| <b>National Traffic Data Service</b><br>(with reference to Section 5.5.4 and 5.5.5 of Part 3) |                                                                           |                                                  |
|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------|
| <b>Item</b>                                                                                   | <b>Company to collect from Transport Scotland’s TSIE Nominated Stores</b> | <b>Issued from Transport Scotland’s Supplier</b> |
| TMUs complete with detector cards                                                             | Yes                                                                       | No                                               |
| WIM Piezo Electronic Sensors                                                                  | Yes                                                                       | No                                               |



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|                                                                                                                                                               |                                                                           |                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------|
| WIM Temperature Probes                                                                                                                                        | Yes                                                                       | No                                               |
| WIM fixing resin                                                                                                                                              | Yes                                                                       | No                                               |
| Communications equipment consisting of Ethernet switches and/or Broadband type (DSL) /PSTN/GSM modems and interconnecting wiring as required within cabinets. | Yes                                                                       | No                                               |
| <p><b>VMS</b><br/>(with reference to Section 5.5.6 of Part 3)</p>                                                                                             |                                                                           |                                                  |
| <b>Item</b>                                                                                                                                                   | <b>Company to collect from Transport Scotland's TSIE Nominated Stores</b> | <b>Issued from Transport Scotland's Supplier</b> |
| VMS (Cantilever) including vertical post, support frame and ALM as required                                                                                   | No                                                                        | Yes                                              |
| Cabinet mounted VMS Controller                                                                                                                                | Yes                                                                       | No                                               |
| VMS (Offset T) including vertical post, support frame and ALM as required                                                                                     | No                                                                        | Yes                                              |
| Bolt group fixing and template                                                                                                                                | Yes                                                                       | No                                               |
| Communications equipment consisting of Ethernet switches and/or Broadband type (DSL) modems and interconnecting wiring within cabinets.                       | Yes                                                                       | No                                               |

|                                                                                      |                                                                           |                                                  |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------|
| <p><b>Journey Time Equipment</b><br/>(with reference to Section 5.5.9 of Part 3)</p> |                                                                           |                                                  |
| <b>Item</b>                                                                          | <b>Company to collect from Transport Scotland's TSIE Nominated Stores</b> | <b>Issued from Transport Scotland's Supplier</b> |

**Part 3: Specific Requirements  
Traffic Scotland Equipment**

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|                                                                                                                                                                                                                                                                |     |    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| Journey time monitoring detection camera heads                                                                                                                                                                                                                 | Yes | No |
| Local processing units as required                                                                                                                                                                                                                             | Yes | No |
| Communications equipment consisting of Ethernet switches and/or Broadband type (DSL) modems, interconnecting wiring within cabinets and power and communication cables required to allow connection between the pole mounted JT equipment and the TSE cabinet. | Yes | No |

**Part 3: Specific Requirements  
Traffic Scotland Equipment**

| <b>Ancillary Equipment</b>                                                                                                                                                                                                            |                                                                           |                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| <b>Item</b>                                                                                                                                                                                                                           | <b>Company to collect from Transport Scotland's TSIE Nominated Stores</b> | <b>Issued from Transport Scotland's Supplier</b>                            |
| Multi-purpose controllers (MPC)                                                                                                                                                                                                       | Yes                                                                       | No                                                                          |
| Active communications equipment including switches, routers, line protection devices and patch leads (fibre and Cat5e) within cabinets.                                                                                               | Yes                                                                       | No                                                                          |
| All necessary communications system interconnecting cables including pre-fabricated, booted, Category 5e Ethernet and fibre patch leads within cabinets.                                                                              | Yes                                                                       | No                                                                          |
| Populated power supply cabinets, i.e. termination pillars (TPs), distribution units (TEDPs) and combined termination pillars and traffic equipment distribution pillars (TP/TEDPs)                                                    | Yes                                                                       | No                                                                          |
| Pre-fabricated Transmission Station enclosure building, complete with heating and ventilation / air conditioning; lighting and internal power; lockable door; intruder alarm; server racks; power termination and cable transmission. | No                                                                        | Yes                                                                         |
| Core Switch / Distribution Switch (as detailed in the IP design) located within the Transmission Station associated with Section 5.2.4.3 (f).                                                                                         | No                                                                        | Yes<br><br>(Note: installation by Transport Scotland specialist contractor) |

**APPENDIX B:**

**PASSIVE NETWORK SPARES TO BE PROVIDED BY THE COMPANY**

**THIS IS APPENDIX B TO PART 3 OF THE NEW WORKS REQUIREMENTS**

**Part 3: Specific Requirements  
Traffic Scotland Equipment**

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**APPENDIX B****PASSIVE NETWORK SPARES TO BE PROVIDED BY COMPANY**

- A. One 2000 metre length of 24 fibre cores to the requirements of Section 5.2.5.2;
- B. One of each type of cabinet used in the New Works where not supplied as TSIE. Cabinets shall include appropriate power distribution units and environmental control equipment.

**Part 3: Specific Requirements  
Traffic Scotland Equipment**

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**APPENDIX C:  
SAMPLE TSE SCHEDULE AND TSIE REQUESTION**

**THIS IS APPENDIX C TO PART 3 OF THE NEW WORKS REQUIREMENTS**



**Part 3: Specific Requirements  
Traffic Scotland Equipment**

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**APPENDIX C**  
**SAMPLE TSE SCHEDULE AND TSIE REQUESTION**

Part 3: Specific Requirements  
Traffic Scotland Equipment



**APWR and Associated Projects**

**Employer Issued Equipment Requisition Form**

Equipment Required  
(1 type per request form)

Scheme Location(s)  
(e.g. ch1250 e/b)

Date of Issue of Request

Proposed Collection Date

Date of Issue

Issued by

Organisation

Signature

Collected by

Organisation

Signature

Requisition Number

Part 3: Specific Requirements  
Traffic Scotland Equipment

| Item Name                | TSE ID             | Serial Number | Date Ordered | Earliest Delivery Date based on Contract lead-in Times | Equipment from Employer's TSE Store |                            | TSE Direct from Employer's Supplier |                        |                           | Install Date | SAT Date   | Pre-Commissioning SAT Cert Ref No. | Commissioning SAT Cert Ref No. |
|--------------------------|--------------------|---------------|--------------|--------------------------------------------------------|-------------------------------------|----------------------------|-------------------------------------|------------------------|---------------------------|--------------|------------|------------------------------------|--------------------------------|
|                          |                    |               |              |                                                        | Date Uplifted by Contractor         | TSE Store Release Note No. | Supplier Name                       | Supplier Delivery Date | Supplier Delivery Ref No. |              |            |                                    |                                |
| <b>GANTRY 03F - 1333</b> |                    |               |              |                                                        |                                     |                            |                                     |                        |                           |              |            |                                    |                                |
| Cab Mount VMS Cont.      | RSC/M90/1333S2     | 7453/0007     | 22/05/2012   | 22/08/2012                                             | N/A                                 | N/A                        | Techspan                            | 12/06/2012             | 2964                      | 24/08/2012   | 18/10/2012 | N/A                                | M54-1N                         |
| M54VMS                   | WMS/M90/1333N      | 7454/0005     | 22/05/2012   | 22/11/2012                                             | N/A                                 | N/A                        | Techspan                            | 12/06/2012             | 2964                      | 03/09/2012   | 18/10/2012 | N/A                                | M54-1N                         |
| EDU                      | GDU/M90/1333N      | 7493/0005     | 22/05/2012   | 29/05/2012                                             | N/A                                 | N/A                        | Techspan                            | 12/06/2012             | 2964                      | 24/08/2012   | N/A        | N/A                                | N/A                            |
| LCU Cont. Standard       | RSC/M90/1333S1     | 7449/0007     | 22/05/2012   | 22/08/2012                                             | N/A                                 | N/A                        | Techspan                            | 12/06/2012             | 2964                      | 24/08/2012   | 18/10/2012 | N/A                                | AMI-01                         |
| LCU Standard             | M5U/M90/1333N1     | 7452/0085     | 22/05/2012   | 22/11/2012                                             | N/A                                 | N/A                        | Techspan                            | 12/06/2012             | 2964                      | 24/08/2012   | 18/10/2012 | N/A                                | AMI-02                         |
| LCU Standard             | M5U/M90/1333N2     | 7452/0086     | 22/05/2012   | 22/11/2012                                             | N/A                                 | N/A                        | Techspan                            | 12/06/2012             | 2964                      | 24/08/2012   | 18/10/2012 | N/A                                | AMI-01                         |
| CCTV PTZ unit            | CAM/M90/1333S1     | 156617        | 18/05/2012   | 25/05/2012                                             | 02/07/2012                          | 204, 205                   | TSP - SSL                           | N/A                    | N/A                       | 08/10/2012   | 10/10/2012 | N/A                                | CCTV/3                         |
| CCTV PTZ unit            | CAM/M90/1333S2     | 156783        | 23/08/2012   | 30/08/2012                                             | 02/07/2012                          | 204, 205                   | TSP - SSL                           | N/A                    | N/A                       | 08/10/2012   | 10/10/2012 | N/A                                | CCTV/2                         |
| CCTV PTZ unit            | CAM/M90/1333S3     | 156594        | 18/05/2012   | 25/05/2012                                             | 02/07/2012                          | 204, 205                   | TSP - SSL                           | N/A                    | N/A                       | 08/10/2012   | 10/10/2012 | N/A                                | CCTV/2                         |
| TP                       | IP/M90/1333S0      | 156755        | 23/08/2012   | 30/08/2012                                             | 24/08/2012                          | 221                        | TSP - SSL                           | N/A                    | N/A                       | 08/10/2012   | 10/10/2012 | N/A                                | CCTV/2                         |
| Cab Mount VMS Cont.      | RSC/M90/1333S4     | 6629/015/12   | 26/09/2011   | 26/12/2011                                             | 26/09/2011                          | 148                        | Seetech                             | N/A                    | N/A                       | 28/09/2011   |            | N/A                                | M54-1S                         |
| M54VMS                   | WMS/M90/1333S5     | 7453/0008     | 22/05/2012   | 22/08/2012                                             | N/A                                 | N/A                        | Techspan                            | 12/06/2012             | 2964                      | 24/08/2012   | 18/10/2012 | N/A                                | M54-1S                         |
| EDU                      | GDU/M90/1333S      | 7454/0006     | 22/05/2012   | 22/11/2012                                             | N/A                                 | N/A                        | Techspan                            | 12/06/2012             | 2964                      | 03/09/2012   | 18/10/2012 | N/A                                | M54-1S                         |
| LCU Standard             | RSC/M90/1333S3     | 7493/0006     | 22/05/2012   | 29/05/2012                                             | N/A                                 | N/A                        | Techspan                            | 12/06/2012             | 2964                      | 24/08/2012   | N/A        | N/A                                | N/A                            |
| LCU Standard             | M5U/M90/1333S1     | 7449/0008     | 22/05/2012   | 22/08/2012                                             | N/A                                 | N/A                        | Techspan                            | 12/06/2012             | 2964                      | 24/08/2012   | 18/10/2012 | N/A                                | AMI-03                         |
| LCU Standard             | M5U/M90/1333S2     | 7452/0088     | 22/05/2012   | 22/11/2012                                             | N/A                                 | N/A                        | Techspan                            | 12/06/2012             | 2964                      | 24/08/2012   | 18/10/2012 | N/A                                | AMI-03                         |
| LCU Standard             | M5U/M90/1333S3     | 7452/0089     | 22/05/2012   | 22/11/2012                                             | N/A                                 | N/A                        | Techspan                            | 12/06/2012             | 2964                      | 24/08/2012   | 18/10/2012 | N/A                                | AMI-03                         |
| LCU Standard             | M5U/M90/1333S0     | 7452/0090     | 22/05/2012   | 22/11/2012                                             | N/A                                 | N/A                        | Techspan                            | 12/06/2012             | 2964                      | 24/08/2012   | 18/10/2012 | N/A                                | AMI-04                         |
| CCTV Controller          | CAM/M90/1333S      | 156347        | 18/05/2012   | 18/08/2012                                             | 23/05/2012                          | 192                        | TSP - SSL                           | N/A                    | N/A                       | 12/06/2012   | 10/10/2012 | N/A                                | CCTV/3                         |
| CCTV Controller          | CAM/M90/1333S      | 156348        | 18/05/2012   | 18/08/2012                                             | 23/05/2012                          | 192                        | TSP - SSL                           | N/A                    | N/A                       | 12/06/2012   | 10/10/2012 | N/A                                | CCTV/2                         |
| TMU                      | TMU/M90/1333S01    | 2011040036    | 18/05/2012   | 18/08/2012                                             | 23/05/2012                          | 192                        | CA Traffic                          | N/A                    | N/A                       | 12/06/2012   | 23/10/2012 | N/A                                | 3F-3-TMU                       |
| TMU                      | TMU/M90/1333S02    | 2011040033    | 18/05/2012   | 18/08/2012                                             | 23/05/2012                          | 192                        | CA Traffic                          | N/A                    | N/A                       | 12/06/2012   | 23/10/2012 | N/A                                | 3F-2-TMU                       |
| TMU                      | TMU/M90/1333S03    | 2011040042    | 28/06/2012   | 28/09/2012                                             | 02/07/2012                          | 203                        | CA Traffic                          | N/A                    | N/A                       | 03/07/2012   | 23/10/2012 | N/A                                | 3F-3-TMU                       |
| MPC 4                    | MPC/M90/1333S01    | TAAJ01122116  | 18/05/2012   | 22/08/2012                                             | 23/05/2012                          | N/A                        | TSP - MOXA                          | N/A                    | N/A                       | 12/06/2012   | 21/09/2012 | N/A                                | MPC/1                          |
| MPC 4                    | MPC/M90/1333S02    | TAAJ01122107  | 18/05/2012   | 22/08/2012                                             | 23/05/2012                          | N/A                        | TSP - MOXA                          | N/A                    | N/A                       | 12/06/2012   | 21/09/2012 | N/A                                | MPC/2                          |
| Switch 3010-24TC         | SW/381/M90/1333S01 | FOC1535V31V   | 18/05/2012   | 22/08/2012                                             | 23/05/2012                          | N/A                        | TSP - Garrettcom                    | N/A                    | N/A                       | 12/06/2012   | 14/09/2012 | N/A                                | AS-1                           |
| Switch 3010-16S-8PC      | SW/382/M90/1333S02 | FOC1541V20D   | 18/05/2012   | 22/08/2012                                             | 23/05/2012                          | N/A                        | TSP - Garrettcom                    | N/A                    | N/A                       | 12/06/2012   | 14/09/2012 | N/A                                | AS-2                           |
| CEC 3 Bay                | CEC/M90/1333S0     | 1333          | 26/03/2012   | 22/08/2012                                             | N/A                                 | N/A                        | TSP - ICEE                          | 05/04/2012             | 8972                      | 29/04/2012   |            | N/A                                |                                |

**Part 3: Specific Requirements**  
**Traffic Scotland Equipment**

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**APPENDIX D:  
SAMPLE POWER SUPPLY TRACKER**

**THIS IS APPENDIX D TO PART 3 OF THE NEW WORKS REQUIREMENTS**

**Part 3: Specific Requirements  
Traffic Scotland Equipment**

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Traffic Scotland Equipment

APPENDIX D  
SAMPLE POWER SUPPLY TRACKER

|                                   |
|-----------------------------------|
| Key                               |
| SRB AT Risk - SRB'S STILL TO      |
| Only EM waylens at risk work      |
| Possible Waylens Conclusion       |
| Waylens Clear - Work yet to start |
| In Progress                       |
| Proposed Programme date from SP   |
| Site Now Live                     |

| Site Ref                          | Current Status                                                                                                                                                                                                                                                                                                         | SRB Dates for Gantry Installation (indicative start Date) | Construction Start Date | Works Duration | Date of Live site |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-------------------------|----------------|-------------------|
| MP Junction 1A - Updated 18/10/12 |                                                                                                                                                                                                                                                                                                                        |                                                           |                         |                |                   |
| Site 07J                          | LIVE                                                                                                                                                                                                                                                                                                                   | 22 September 2012                                         | ?                       | Ongoing        | 26/09/2012        |
| Site 07J                          | LIVE                                                                                                                                                                                                                                                                                                                   | 22 September 2012                                         | 24/04/2012              | 43             | 06/09/2012        |
| Site 08J                          | LIVE                                                                                                                                                                                                                                                                                                                   | 22 September 2012                                         | 24/04/2012              | 43             | 06/09/2012        |
| Division SP1                      | LIVE                                                                                                                                                                                                                                                                                                                   | N/A                                                       | 24/04/2012              | 43             | 06/09/2012        |
| Site 04J                          | LIVE                                                                                                                                                                                                                                                                                                                   | 22 September 2012                                         | ?                       | ?              | 29/05/2012        |
| (Site Compound Supply)            | LIVE                                                                                                                                                                                                                                                                                                                   | N/A                                                       | ?                       | ?              | 31st July 2012    |
| Site 05J                          | LIVE                                                                                                                                                                                                                                                                                                                   | 30 September 2012                                         | To follow on from 12J   | ?              | 06/10/2012        |
| Site 10J                          | LIVE                                                                                                                                                                                                                                                                                                                   | 29 September 2012                                         | To follow on from 12J   | ?              | 06/10/2012        |
| Site 11J                          | LIVE                                                                                                                                                                                                                                                                                                                   | 27 September 2012                                         | To follow on from 12J   | ?              | 14/09/2012        |
| Site 06J                          | LIVE                                                                                                                                                                                                                                                                                                                   | 28 September 2012                                         | w/c 17/09/12            | ?              | 20/09/2012        |
| Site 12J                          | LIVE                                                                                                                                                                                                                                                                                                                   | 28 September 2012                                         | w/c 17/09/12            | ?              | 20/09/2012        |
| Division SP2                      | LIVE                                                                                                                                                                                                                                                                                                                   | 28 September 2012                                         | 29/05/2012              | 1              | 29/05/2012        |
| M&E# 02500 (TMU)                  | NO LONGER REQUIRED                                                                                                                                                                                                                                                                                                     |                                                           |                         |                |                   |
| Site 07J                          | LIVE                                                                                                                                                                                                                                                                                                                   | 29 September 2012                                         | 27/09/2012              | ?              | 11/10/2012        |
| Site 08J                          | LIVE                                                                                                                                                                                                                                                                                                                   | 29 September 2012                                         | 27/09/2012              | ?              | 11/10/2012        |
| Site 09J                          | LIVE                                                                                                                                                                                                                                                                                                                   | 29 September 2012                                         | 27/09/2012              | ?              | 06/10/2012        |
| Site 13J (Section A)              | LIVE                                                                                                                                                                                                                                                                                                                   | ?                                                         | ?                       | ?              | 21/11/2011        |
| Site 14J (Section A)              | LIVE                                                                                                                                                                                                                                                                                                                   | 06/03/2012                                                | 06/03/2012              | 9              | 14/03/2012        |
| Site 15J (Section A)              | LIVE                                                                                                                                                                                                                                                                                                                   | 06/03/2012                                                | 06/03/2012              | 9              | 14/03/2012        |
| Site 16J (Section A)              | LIVE                                                                                                                                                                                                                                                                                                                   | 21/09/2012                                                | 21/09/2012              | 61             | 21/09/2012        |
| Newbridge Traffic Signals Supply  | Design                                                                                                                                                                                                                                                                                                                 |                                                           |                         |                |                   |
|                                   | Update 06/09/12 - EM emailed SRB to indicate them to commence with the design/quotation of the works.                                                                                                                                                                                                                  |                                                           |                         |                |                   |
|                                   | Update 14/09/12 - DMCCole issue drawing showing the proposed TP location. EM forwarded to SP for design.                                                                                                                                                                                                               |                                                           |                         |                |                   |
|                                   | Update 05/10/12 - Derek Jessamine has provide a response detailing the works and the cost. EM forwarded to SRB to review and confirm if contact. SRB/SP to discuss supply as SP think that the supply could be simplified if the power requirement was reduced. SRB to discuss with subcontractor and confirm with SP. |                                                           |                         |                |                   |



**Part 3: Specific Requirements  
Traffic Scotland Equipment**

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**APPENDIX E:**

**STRATEGY OF ITS NEW WORKS FOR TRAFFIC SCOTLAND EQUIPMENT DOCUMENT**

**THIS IS APPENDIX E TO PART 3 OF THE NEW WORKS REQUIREMENTS**

**Part 3: Specific Requirements  
Traffic Scotland Equipment**

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**APPENDIX E****STRATEGY OF ITS NEW WORKS FOR TRAFFIC SCOTLAND EQUIPMENT DOCUMENT**

To demonstrate to the Contracting Authority the Company's understanding of the Company's potential impact to the TSS and its obligations, the Company shall prepare a "Strategy for Delivery of the ITS works for Traffic Scotland Equipment" document that identifies and captures all obligations within the Agreement. The Company shall consult and comply with the requirements of the Contracting Authority when developing this document. The Company shall not commence any works associated with this Part 3 until the Contracting Authority has given written approval of the document. The Company shall incorporate any comments made by the Contracting Authority in to the document. The strategy is a live document that shall be updated by the Company and re-approved by the Contracting Authority as the work stages progress.

The following document structure shall be used in the preparation of the strategy:

**Contents:****1. Contractor's Proposals and Approach for the ITS Works**

- 1.1 Overview of Obligations to be undertaken by the Contractor
- 1.2 Contractor's Delivery Team
- 1.3 Contractor's ITS Delivery Team and Key Staff
- 1.4 Investigations and cable tracing
- 1.5 Existing Equipment
- 1.6 Pre Construction Phase
- 1.7 Ensuring Continuous Traffic Scotland Service
- 1.8 Interface with existing Traffic Scotland network/equipment

**2 Communications and Consultation Plan**

- 2.1 Communication protocol for planned worked to the TSS
- 2.2 Emergency Contact & procedures

**3 Stages of Delivery of ITS Works****4 Delivery of an Operational Traffic Scotland Service**

- 4.1 The Scheme
- 4.2 Required TSE
- 4.3 Scheme Drawings
- 4.4 Gantry Locations
- 4.5 Power Networks
- 4.6 Energy Requirements and Sustainable Sources

**5 Company's Documentation****6 Design Approach and Checking**

- 6.1 Design Methodology
- 6.2 Pre-Works Investigations
- 6.3 Conceptual Design Validation and Detailed Design
- 6.4 Site Design
- 6.5 Power Design
- 6.6 Cabinet and TSE Site Layouts
- 6.7 CCTV
- 6.8 IP Communications Networking
- 6.9 Commissioning

**7 Proposed Traffic Scotland Equipment (TSE)**

- 7.1 Employer Issued Equipment
- 7.2 Contractor Issued Equipment

**Part 3: Specific Requirements  
Traffic Scotland Equipment**

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**8 Construction**

- 8.1 Installation of Longitudinal Motorway Communication Ducts
- 8.2 Installation of Motorway Communication Inspection Chambers
- 8.3 Installation of Motorway Termination Pillar (TP)
- 8.4 Installation of Motorway Cabinets
- 8.5 Loop Installation
- 8.6 VMS Erection

**9 Testing and Commissioning**

- 9.1 Testing
- 9.2 Commissioning

**Appendix A - EIE Requisition Form****Appendix B - Drawings****Appendix C - Organogram****Appendix D - Key Staff and CV's****Appendix E - ITS Construction Programme****Appendix F - Consultation Meeting Minutes****Appendix G - Testing & Commissioning Flowchart**

**APPENDIX F:  
TRAFFIC SCOTLAND SERVICE**

**THIS IS APPENDIX F TO PART 3 OF THE NEW WORKS REQUIREMENTS**

**Part 3: Specific Requirements  
Traffic Scotland Equipment**

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## APPENDIX F

### TRAFFIC SCOTLAND SERVICE

The national TSS was established by the Scottish Ministers to support the delivery of the Government's purpose of sustainable economic growth. In this regard the specific objectives of the TSS are to:

- (a) Improve journey time reliability;
- (a) Reduce disruption caused by incidents, roadworks and events;
- (b) Minimise the effects of congestion by the provision of alternative route advice;
- (c) Allow travellers to make informed decisions concerning route, time, and means of transport by the provision of credible and accurate travel information; and
- (d) Improve safety and security for travellers.

The management of the TSS is undertaken by Transport Scotland's Network Operations team who form part of Transport Scotland's Trunk Road Network Management Directorate. The TSS is delivered through the Traffic Scotland Operator (TSOp) on behalf of Transport Scotland.

The Traffic Scotland Operator and Infrastructure Services Contractor (TSOISC) carries out its operational duties from the TSNCC for Transport Scotland's Trunk Road and Bus Operations Directorate 24 hours a day, 7 days a week.

Transport Scotland renews TSS providers' contracts at predefined periods, as a consequence these providers may change prior to and during the Contract. Transport Scotland's current providers in regard to Traffic Scotland Service and TSE are:

- (a) TSOISC – this provider undertakes the operations and data service related to the TSS together with the maintenance, renewal, and provision of TSE;
- (b) Traffic Scotland Systems Contract (TSSC) - this provider maintains and develops the software and associated instation hardware of the Traffic Scotland systems, in addition this provider is the design authority with respect to the IP communications and infrastructure; and
- (c) Supplier of sign and signalling equipment.

The TSNCC is located just outside of Edinburgh adjacent to the Forth Road Bridge in a newly constructed building.

Transport Scotland continues to incrementally upgrade the existing TSE to Internet Protocol (IP) communications and modify the Traffic Scotland Instation/software. The Company shall be required to protect and integrate with Transport Scotland's TSE.

More information about the TSS can be found at [www.trafficscotland.org.uk](http://www.trafficscotland.org.uk).



**Part 3: Specific Requirements**  
**Traffic Scotland Equipment**

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**APPENDIX G:**

**COMMISSIONING TESTING AND INSPECTION PLAN TABLE OF CONTENTS**

**THIS IS APPENDIX G TO PART 3 OF THE NEW WORKS REQUIREMENTS**

**Part 3: Specific Requirements  
Traffic Scotland Equipment**

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**APPENDIX G**  
**COMMISSIONING TEST AND INSPECTION PLAN TABLE OF CONTENTS**

- 1 Introduction**
- 2 Commissioning, Testing & Inspection Plan: Process**
  - 2.1 Overview
  - 2.2 Description of Scheme
  - 2.3 Project Interfaces
  - 2.4 Glossary
- 3 Stakeholders**
  - 3.1 Key Stakeholders
- 4 Deliverables**
  - 4.1 Responsibility Matrix
  - 4.2 Employer Notification Periods
  - 4.3 Overview of Testing and Commissioning Timetables
- 5 Electrical Power Supplies**
  - 5.1 Procurement
- 6 Employer Issued Equipment**
  - 6.1 Control of Employer Issued Equipment
  - 6.2 Employer Issued Equipment Requisition Form
  - 6.3 Contractor's Traffic Scotland Equipment Assembly Point
  - 6.4 Employer Issued Equipment Inspection Process
- 7 Scheme Commissioning Stages**
  - 7.1 Stage 1: Pre Site Testing
  - 7.2 Stage 2: Pre Installation Testing
  - 7.3 Stage 3: Installation Testing (Passive Network)
  - 7.4 Stage 4a: Standalone Site Acceptance Testing
  - 7.5 Stage 4b: Pre-Commissioning Site Acceptance Testing
  - 7.6 Stage 4c: Commissioning Site Acceptance Testing

7.7 Stage 5: Employer's Integration Testing

7.8 Stage 6 Operational Calibration

**8 Testing and Commissioning Requirements**

8.1 Communications Network

8.2 Passive Network

8.3 Active Network

**9 Decommissioning and Removal of Redundant Equipment**

**10 Issues, Risks and Mitigation**

**Appendix A – Scheme Overview and Schematics**

**Appendix B – Detailed Testing and Commissioning Programme**

**APPENDIX H:  
HANDOVER DOCUMENTATION CONTENTS LIST**

**THIS IS APPENDIX H TO PART 3 OF THE NEW WORKS REQUIREMENTS**

**Part 3: Specific Requirements  
Traffic Scotland Equipment**

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Traffic Scotland Equipment

APPENDIX H  
HANDOVER DOCUMENTATION CONTENTS LIST

| NDS9001 |         |                         |                            |        |              |                                                                                                                                                    |
|---------|---------|-------------------------|----------------------------|--------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Volume  | Section | Section Title           | Contents -<br>Section Item | Volume | Register Tab | Description                                                                                                                                        |
| 1       | 1       |                         | 1.1.1                      |        |              | Introduction                                                                                                                                       |
| 1       | 1       |                         | 1.1.2                      |        |              | Scope of Works referencing Geographic/Traffic Scotland Equip. drawings                                                                             |
| 1       | 1       |                         | 1.1.3                      |        |              | Overview of Traffic Scotland equipment and documentation                                                                                           |
| 1       | 1       |                         | 1.1.4                      |        |              | Traffic Scotland Control Register                                                                                                                  |
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Traffic Scotland Equipment

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| 2       | 2       | Test Results                  | <a href="#">2.2.1</a>   |        |              | Register of Test Results (Note: - Expand as necessary, Tabs in register to match folder structure) (Details below are typical examples)                                        |
| 2       | 2       |                               |                         |        | A            | MCG1022 Stage 1 Power Cable Test Results                                                                                                                                       |
| 2       | 2       |                               |                         |        | B            | BS7671 Electrical Certificate (Stage 2)                                                                                                                                        |
| 2       | 2       |                               |                         |        | C1,C2,C3     | MCG1022 Stage 1 Communications Cable (30pr,10pr,2pr) Test Results                                                                                                              |
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| 2       | 2       |                               |                         |        | E            | MCG1055 Stage 1 Optical Fibre Cable Test Results                                                                                                                               |
| 2       | 2       |                               |                         |        | F            | MCG1055 Stage 2 Optical Fibre Cable Test Results                                                                                                                               |
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| 2       | 2       |                               |                         |        | H            | Detector Loop Test Sheets                                                                                                                                                      |
| 2       | 2       |                               |                         |        | I            | Duct Pressure and Mandril Tests                                                                                                                                                |
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| 2       | 2       |                               |                         |        | L            | Gantry Earth Test Results                                                                                                                                                      |
| 2       | 2       |                               |                         |        | M            | CCTV Mast Certification                                                                                                                                                        |
| 2       | 2       |                               |                         |        | N            | 100Hour Soak Test                                                                                                                                                              |
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| 2       | 2       |                               | <a href="#">2.2.12</a>  |        |              | MCH 1540 Loop-Loop Feeder                                                                                                                                                      |
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| 2       | 3       |                               |                         |        | C            | Access Switches Commissioning and Test Results                                                                                                                                 |
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| 2       | 3       |                               |                         |        | E            | ERT Commissioning and Test Results                                                                                                                                             |
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| 2       | 3       |                               |                         |        | H            | MS4VMS Commissioning and Test Results                                                                                                                                          |
| 2       | 3       |                               |                         |        | I            | LCU Commissioning and Test Results                                                                                                                                             |
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| 3      | 1       | Stage 3 Safety Audit Report including Traffic Scotland Maintenance Access Audit | 3.1                     |        |              | Copy of Report including details of Transport / Traffic Scotland's acceptance of maintenance access and egress.                                                                                           |
| 3      | 2       | Spares                                                                          | 3.2                     |        |              | Confirmation of Receipt of Comm Spares Equipment listed in Contract Documents                                                                                                                             |
| 4      | 1       | Maintenance Service & Equipment Manuals                                         | 4.1.1                   |        |              | Maintenance Service & Equipment Manuals Register<br>(Note: Expanded/Amend as applicable for equipment provided/installed, Tabs in register to match folder structure. Details below are typical examples) |
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| 4      | 1       |                                                                                 | 4.1.3                   |        |              | Incident Management System (IMS) Engineer's Terminal Users Guide                                                                                                                                          |
| 4      | 1       |                                                                                 | 4.1.4                   |        |              | IMS Multi-Purpose Controller 4 User Guide                                                                                                                                                                 |
| 4      | 1       |                                                                                 | 4.1.5                   |        |              | Battery Care                                                                                                                                                                                              |
| 4      | 1       |                                                                                 | 4.1.6                   |        |              | ML 600 Clear Manual                                                                                                                                                                                       |
| 4      | 1       |                                                                                 | 4.1.7                   |        |              | Operation & Maintenance Manual for MS4 Variants 7 x 15, 6 x 12, 5 x 23, 8 x 12                                                                                                                            |
| 4      | 1       |                                                                                 | 4.1.8                   |        |              | CEC O&M Manual (Air Conditioning)                                                                                                                                                                         |
| 4      | 1       |                                                                                 | 4.1.9                   |        |              | Digital CCTV Operation and Maintenance Manual                                                                                                                                                             |
| 4      | 1       |                                                                                 | 4.1.10                  |        |              | Operation & Maintenance Manual for MS4 Canopy Mounted                                                                                                                                                     |
| 4      | 1       |                                                                                 | 4.1.11                  |        |              | Operations & Maintenance Manual for LCD                                                                                                                                                                   |
| 4      | 1       |                                                                                 | 4.1.12                  |        |              | Operations & Maintenance Manual for CEC                                                                                                                                                                   |
| 4      | 1       |                                                                                 | 4.1.13                  |        |              | Maintenance Manual for EHT1854                                                                                                                                                                            |
| 4      | 1       |                                                                                 | 4.1.14                  |        |              | Accident Warning Light                                                                                                                                                                                    |
| 4      | 1       |                                                                                 | 4.1.15                  |        |              | CCTV Tracker Bracket                                                                                                                                                                                      |



Aberdeen Western Peripheral Route / Balmedie-Tipperty  
AWPR/B-T Managing Agent, Aberdeen Business Centre,  
Willowbank House, Willowbank Road, Aberdeen AB11 6YG

Tel: **01224 332322** | Fax: **01224 322 361**

Email: [enquiries@awpr.co.uk](mailto:enquiries@awpr.co.uk) | Web: [www.awpr.co.uk](http://www.awpr.co.uk)

*Working in partnership*

# Aberdeen Western Peripheral Route / Balmedie - Tipperty

Competition for the Design, Build, Finance and Operation of the  
Aberdeen Western Peripheral Route / Balmedie - Tipperty

Volume Five

Schedule 2: New Works Requirements

Part 4: Specification

709/ACP/600

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Part 4 Specification

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**Preamble to the Specification****1 Preamble to the Specification**

- 1.1 The Specification for the New Works shall be the Specification for Highway Works, published by The Stationery Office as Volume 1 of the MCHW current on the Reference Date, as modified and extended by the following:
- a) Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to the Agreement;
  - b) Appendix 0/2: Agreement-Specific Minor Alterations to Existing Clauses, Tables and Figures included in the Agreement;
  - c) The Numbered Appendices listed in Appendix 0/3; and
  - d) Appendix 0/5: Special national alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland.
- 1.2 Appendix 0/4 contains a list of the Drawings.
- 1.3 The relevant publication date of each page of the Specification for Highway Works is given in the Schedule of Pages and Relevant Publication Dates, contained in this Preamble to the Specification.
- 1.4 An Additional Clause, as indicated by a suffix 'A' in Appendix 0/5 is an alteration originating from the Overseeing Organisation of Scotland, Wales or Northern Ireland. An Additional Clause as indicated by a suffix 'AR' in Appendix 0/1 is an Agreement-specific alteration.
- 1.5 A Substitute Clause, as indicated by a suffix 'S' in Appendix 0/5 is an alteration originating from the Overseeing Organisation of Scotland, Wales or Northern Ireland. A Substitute Clause as indicated by a suffix 'SR' in Appendix 0/1 is an Agreement-specific alteration.
- 1.6 A Cancelled Clause, as indicated by a suffix 'C' in Appendix 0/5 is an alteration originating from the Overseeing Organisation of Scotland, Wales or Northern Ireland. A Cancelled Clause indicated by a suffix 'CR' in Appendix 0/1 is an Agreement-specific alteration.
- 1.7 Insofar as any of the Numbered Appendices may conflict or be inconsistent with any provision in the Specification for Highway Works the Numbered Appendices shall always prevail. Additionally, Numbered Appendices 0/1 and 0/2 shall take precedence over Numbered Appendix 0/5.
- 1.8 Any reference in this Part 4 to a Specification Clause number or Appendix shall be deemed to refer to the corresponding Substitute Clause number or Appendix listed in Appendix 0/1, 0/2 or 0/5.
- 1.9 Where a Clause is altered any original Table / Figure referred to in the Clause shall apply unless the Table / Figure is also altered. Where a Table / Figure is altered any reference in a Clause to the original Table / Figure shall apply to the altered Table / Figure.
- 1.10 Where a Clause in the Specification relates to work, goods or materials which are not required for the New Works it shall be deemed not to apply.
- 1.11 Any Appendix referred to in the Specification which is not used shall be deemed not to apply.
- 1.12 Where a Clause in the Specification is prefixed by an # this indicates that this particular Clause has a substitute National Alteration for one or more of the Overseeing Organisations of Scotland, Wales or Northern Ireland.



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**Part 4 Specification**

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**Preamble to the Specification**

- 1.13 Substitute or additional National Clauses shall be used within countries to which they specifically apply and they are deemed to replace corresponding Clauses in the main text of the Specification as appropriate.
- 1.14 The substitute National Clauses are located at the end of the relevant Series together with the additional National Clauses of the Overseeing Organisation.
- 1.15 Other than where references to the Overseeing Organisation are made in the context of the Overseeing Organisation granting statutory or type approvals, the roles and functions of the Overseeing Organisation shall be undertaken by the Contracting Authority.
- 1.16 Where the Specification requires the provision of documentation to the Overseeing Organisation for statutory or type approval such documentation shall be provided to Transport Scotland with a minimum of four hard copies and one pdf copy provided to the Contracting Authority for information.
- 1.17 The Specification is used in conjunction with this Agreement and, the delegation of the roles and functions of the Overseeing Organisation as stated in Section 1.12 above shall be amended as follows:
- a) If any agreement, consent or approval required to be obtained from the Overseeing Organisation impacts on the health and safety of the general public, the environment or any property or equipment not owned or operated by the Company or the New Works Contractor, such agreement, consent, or approval shall be obtained from the Contracting Authority.
  - b) Where the Specification provides for the Overseeing Organisation to require a test, waive the requirement for a test or alter testing frequency, the party to whom the Overseeing Organisation's roles and functions have been ascribed by Clause 1.15 above shall exercise such decisions in accordance with the New Works Requirements stated in this Agreement.
- 1.18 Where a Clause or Sub-Clause in the Specification is annotated by "05/01" or similar, this indicates the relevant publication date that alteration(s) to the Clause or Sub-Clause were made.
- 1.19 The first double digit refers to the month, and the second double digit refers to the year.
- 1.20 The following interpretations shall be applied to words or terms used in documents referred to in this Part 4:
- a) except where the context requires otherwise, "Engineer" shall be deemed to be a reference to the "Designer" where such an interpretation is necessary for the Company to fulfil its obligations in regard to the Design.
  - b) where a Numbered Appendix is referred to it shall mean a reference to the Numbered Appendix included in this Part 4
  - c) all references to the "Site" shall be deemed to be references to lands and other places on, under, in, or through which the New Works shall be constructed; and
  - d) any reference to a "British Standard" shall permit the use of an equivalent European standard.

## Part 4 Specification

**Preamble to the Specification****Schedule of Pages and Relevant Publication Dates of Specification for Highway Works**

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| 000                    | 1                            | March 1998              |
| 000                    | 3F                           | May 2005                |
| 000                    | 2                            | November 2006           |
|                        |                              |                         |
| 100                    | 2                            | May 2001                |
| 100                    | W1F                          | May 2005                |
| 100                    | 12 to 14, 20F                | November 2005           |
| 100                    | 1, 3 to 7, N1, N3            | May 2006                |
| 100                    | 8 to 9, 11, 15 to 19, N2, N4 | November 2006           |
| 100                    | 10, N5, N6F                  | November 2008           |
|                        |                              |                         |
| 200                    | 1, 3F                        | May 2001                |
| 200                    | 2                            | May 2004                |
|                        |                              |                         |
| 300                    | 1                            | May 2001                |
| 300                    | 4                            | November 2002           |
| 300                    | 2, 3, 5, 6F                  | May 2008                |
|                        |                              |                         |
| 400                    | 1 to 6, 8, 10 to 13F         | November 2007           |
| 400                    | 7, 9                         | November 2008           |
|                        |                              |                         |
| 500                    | 23 to 24, 26                 | November 2004           |
| 500                    | 28F                          | May 2005                |
| 500                    | 3, 22, N1F                   | May 2006                |
| 500                    | 2, 5, 27                     | November 2006           |
| 500                    | 6, 25                        | November 2007           |
| 500                    | 1, 4, 7 to 21                | November 2009           |

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| 600                    | 33                                                | November 2003           |
| 600                    | 2, 27 to 28, 30 to 32, 34 to 36, N1               | November 2005           |
| 600                    | 25 to 26                                          | November 2006           |
| 600                    | 42 to 49, 51 to 68F                               | November 2007           |
| 600                    | 37, 50                                            | November 2008           |
| 600                    | 1, 3 to 24, 29, 38 to 41, S1 to S3F,<br>N2 to N4F | November 2009           |
|                        |                                                   |                         |
| 700                    | 2 to 3, 5 to 6, N1, N3 to N5F                     | November 2006           |
| 700                    | 33 to 34F                                         | November 2007           |
| 700                    | 4, N2                                             | August 2008             |
| 700                    | 1, 7 to 32F                                       | November 2009           |
|                        |                                                   |                         |
| 800                    | 1 to 25F                                          | November 2009           |
|                        |                                                   |                         |
| 900                    | 2 to 5, 9 to 22, 24 to 26, 28 to 67F              | August 2008             |
| 900                    | 1, 6 to 8, S1F                                    | November 2008           |
| 900                    | 23, 27                                            | May 2009                |
|                        |                                                   |                         |
| 1000                   | 3, 5 to 6                                         | November 2005           |
| 1000                   | 1 to 2, 4, 7 to 15, 19 to 33F                     | May 2006                |
| 1000                   | 16 to 18                                          | November 2006           |
|                        |                                                   |                         |
| 1100                   | 1, 4F                                             | November 2004           |
| 1100                   | 2, N1F                                            | November 2006           |
| 1100                   | 3                                                 | August 2008             |
|                        |                                                   |                         |
| 1200                   | 5                                                 | May 2001                |
| 1200                   | 2 to 3, W1F                                       | August 2003             |
| 1200                   | 1, 14 to 16F                                      | May 2004                |

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| 1200                   | 4, 9 to 11, 13                                                                | May 2005                |
| 1200                   | 12                                                                            | November 2006           |
| 1200                   | 6 to 7, N1 to N4F                                                             | November 2007           |
| 1200                   | 8                                                                             | May 2008                |
|                        |                                                                               |                         |
| 1300                   | N2F                                                                           | November 2003           |
| 1300                   | 3 to 4                                                                        | November 2004           |
| 1300                   | 1, 5 to 10, 12F                                                               | November 2005           |
| 1300                   | 2, 11, N1                                                                     | May 2006                |
|                        |                                                                               |                         |
| 1400                   | 2, N1F                                                                        | May 2001                |
| 1400                   | 1, 3 to 9F                                                                    | May 2006                |
|                        |                                                                               |                         |
| 1500                   | 7                                                                             | May 2001                |
| 1500                   | 2                                                                             | February 2003           |
| 1500                   | 3 to 4, 8 to 11, 13                                                           | November 2004           |
| 1500                   | 1, 5 to 6, 12, 14 to 17F                                                      | November 2006           |
|                        |                                                                               |                         |
| 1600                   | 1, 4 to 5, 9, 15, 17 to 18, 24 to 26, 29 to 31, 35, 38, 49F                   | March 1998              |
| 1600                   | 2, 6 to 8, 10 to 14, 16, 19, 27 to 28, 32 to 34, 36 to 37, 39 to 42, 44 to 48 | November 2003           |
| 1600                   | 3, 20 to 23, 43                                                               | November 2005           |
|                        |                                                                               |                         |
| 1700                   | 2 to 7, 10 to 15                                                              | May 2004                |
| 1700                   | 8 to 9                                                                        | May 2005                |
| 1700                   | 1, 16 to 22F                                                                  | May 2006                |
|                        |                                                                               |                         |
| 1800                   | 1, 4, 6, 8 to 9                                                               | May 2004                |
| 1800                   | 2 to 3, 5, 7, 10 to 12F                                                       | November 2005           |

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|                        |                                         |                         |
| <b>1900</b>            | 17                                      | May 2003                |
| <b>1900</b>            | 1, 5, 8 to 14, 16, 18 to 30F, S1 to S2F | May 2005                |
| <b>1900</b>            | 6, 7,15                                 | May 2008                |
| <b>1900</b>            | 2 to 4                                  | November 2008           |
|                        |                                         |                         |
| <b>2000</b>            | 1, 3 to 4F                              | May 2001                |
| <b>2000</b>            | 2                                       | November 2004           |
|                        |                                         |                         |
| <b>2100</b>            | 1, 4F                                   | March 1998              |
| <b>2100</b>            | 2                                       | November 2003           |
| <b>2100</b>            | 3                                       | November 2005           |
|                        |                                         |                         |
| <b>2300</b>            | 1                                       | March 1998              |
| <b>2300</b>            | 2 to 3F                                 | May 2001                |
|                        |                                         |                         |
| <b>2400</b>            | 1, 4, 7F                                | May 2005                |
| <b>2400</b>            | 2                                       | May 2006                |
| <b>2400</b>            | 3, 5 to 6                               | May 2008                |
|                        |                                         |                         |
| <b>2500</b>            | 1                                       | May 2001                |
| <b>2500</b>            | 2, 8, 11F                               | November 2003           |
| <b>2500</b>            | 10                                      | November 2004           |
| <b>2500</b>            | 6 to 7, 9                               | May 2005                |
| <b>2500</b>            | 5                                       | May 2006                |
| <b>2500</b>            | 3 to 4                                  | November 2006           |
|                        |                                         |                         |
| <b>2600</b>            | 1                                       | March 1998              |
| <b>2600</b>            | 2 to 4                                  | November 2003           |

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| 2600                   | 5                                      | November 2004           |
| 2600                   | 6                                      | May 2005                |
| 2600                   | 7F                                     | November 2006           |
|                        |                                        |                         |
| 3000                   | 1, 4 to 7, 10, 12 to 17, 19, 22 to 27F | May 2001                |
| 3000                   | 20                                     | November 2004           |
| 3000                   | 2 to 3                                 | May 2006                |
| 3000                   | 8 to 9, 11, 18, 21                     | May 2008                |
|                        |                                        |                         |
| 5000                   | 1, 4 to 19F, S1F                       | May 2005                |
| 5000                   | 2 to 3                                 | November 2008           |
|                        |                                        |                         |
| Appendix A             | 1 to 32F                               | May 2008                |
|                        |                                        |                         |
| Appendix B             | 1                                      | May 2006                |
| Appendix B             | 2 to 7F                                | November 2006           |
|                        |                                        |                         |
| Appendix C             | 1                                      | May 2005                |
| Appendix C             | 2F                                     | November 2006           |
|                        |                                        |                         |
| # Appendix D           | 1F                                     | May 2005                |
| Appendix D(NI)         | N1F                                    | March 1998              |
|                        |                                        |                         |
| # Appendix E           | 1F                                     | May 2005                |
| Appendix E(NI)         | N1F                                    | May 2005                |
|                        |                                        |                         |
| Appendix F             | 14                                     | November 2008           |
| Appendix F             | 1 to 13, 15 to 56F                     | May 2009                |
|                        |                                        |                         |
| Appendix G             | 1F                                     | May 2004                |
|                        |                                        |                         |

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| <b>Appendix H</b>      | 1                  | May 2004                |
| <b>Appendix H</b>      | 2                  | November 2005           |
| <b>Appendix H</b>      | 3                  | November 2006           |
| <b>Appendix H</b>      | 4 to 9F            | November 2008           |

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## Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to this Agreement

### List of Additional Clauses, Tables and Figures

| Clause Number | Title                                             |
|---------------|---------------------------------------------------|
| 270AR         | Tree Felling                                      |
| 271AR         | Existing Vegetation                               |
|               |                                                   |
| 370AR         | Rabbit, Hare, Deer and Otter Fence Specifications |
|               |                                                   |
| 971 AR        | Stone Mastic Asphalt Surface Course               |
| 973 AR        | Overband Sealing                                  |
| 976AR         | Pavement Cores                                    |
|               |                                                   |
| 1270AR        | Passively Safe Sign Posts                         |
| 1272AR        | Chart Node and Section Markers                    |
| 1370AR        | Lamp Disposal                                     |
|               |                                                   |
| 1470AR        | Temporary Overhead Feed to Lighting Unts          |
|               |                                                   |
| 1670AR        | Static Load Testing of Piles                      |
| 1671AR        | Pile Integrity Tests                              |
| 1672AR        | Drilling Fluid                                    |
| 1673AR        | Ground Investigation                              |
| 1674AR        | Geotechnical Reporting                            |
| 1675AR        | Geotechnical Categorisation                       |
|               |                                                   |
| 1770AR        | Construction Tolerances in Structural Concrete    |
| 1771AR        | Reinforcement Couplers                            |
| 1772AR        | Concrete Repairs – General Requirements           |
| 1773AR        | Removal of Concrete in Areas to be Repaired       |



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**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| <b>Clause Number</b> | <b>Title</b>                                                            |
|----------------------|-------------------------------------------------------------------------|
| 1774AR               | Surface Preparation                                                     |
| 1775AR               | Concrete Repairs                                                        |
| 1776AR               | Foamed Concrete Fill to Structures and Backfilling to Drainage Trenches |
| 1777AR               | Installation of Resin Anchored Reinforcement                            |
| 1778AR               | Early Thermal Cracking                                                  |
| 1870 AR              | General                                                                 |
| 1871 AR              | Scope                                                                   |
| 1872 AR              | Normative References                                                    |
| 1873 AR              | Terms and Definitions                                                   |
| 1874 AR              | Specifications and Documentation                                        |
| 1875 AR              | Constituent Products                                                    |
| 1876 AR              | Preparation and Assembly                                                |
| 1877 AR              | Welding                                                                 |
| 1878 AR              | Mechanical Fastening                                                    |
| 1879 AR              | Erection                                                                |
| 1880 AR              | Surface Treatment                                                       |
| 1881 AR              | Geometrical Tolerances                                                  |
| 1882 AR              | Inspection, Testing and Correction                                      |
|                      |                                                                         |
| 2170AR               | Permanent Works Bolts                                                   |
| 2171AR               | Bearing Replacement                                                     |
|                      |                                                                         |
| 2670AR               | Anti-Graffiti Coatings                                                  |
|                      |                                                                         |
| 3270AR               | Emergency Response                                                      |

**List of Substitute Clauses, Tables and Figures**

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**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| <b>Clause Number, etc.</b> | <b>Title</b>                                                 |
|----------------------------|--------------------------------------------------------------|
| <b>1801SR</b>              | Structural Steelwork - General                               |
| <b>1802SR</b>              | Amendments to BS EN 1090-2:2008                              |
| <b>1803SR</b>              | Amendments to Steel Bridge Group Model Project Specification |
| <b>2101SR</b>              | Bridge Bearings – General                                    |

**List of Cancelled Clauses, Tables and Figures**

| <b>Clause Number, etc.</b>    | <b>Title</b>            |
|-------------------------------|-------------------------|
| <b>1501 to 1534 Inclusive</b> | Motorway Communications |

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**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement****Additional Clauses, Tables and Figures**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>270AR</b>  | <p><b>1 Tree Felling</b></p> <p>1.1 Works shall be carried out in accordance with:</p> <ul style="list-style-type: none"> <li>a) BS 5837: 2012 Trees in Relation to Construction. Recommendations;</li> <li>b) BS 3998: 2010 Recommendations for Tree Work; and</li> <li>c) BS 4428: 1989 Code of Practice for General Landscape Operations (excluding hard surfaces).</li> </ul> <p>1.2 Marking of Trees to be Removed</p> <p>1.2.1 The Company shall set out the New Works prior to the commencement of any tree felling operations and shall indicate with paint those trees the removal of which he considers necessary for the construction of the Permanent Works. No trees, bushes or hedges shall be felled or uprooted without approval from the Contracting Authority.</p> <p>1.3 Precautions</p> <p>1.3.1 Before commencing felling operations warning notices and arrangements shall be made by the Company to prevent public gaining access to the danger zone.</p> <p>1.3.2 When felling of mature trees takes place among trees and vegetation that shall be preserved, near property boundaries, public roads, buildings or other Structures, trees shall be carefully cut down in sections so as to avoid damage to adjacent features and vegetation. To avoid compaction of ground appropriate geotextiles shall be laid down where vehicles / plant have access to the New Works Site.</p> <p>1.3.3 Where felling takes place close to Side Roads the Company shall notify the relevant roads authority and the police. The Company shall comply with the Code of Practice for Safety at Street and Road Works in respect of warning signs, direction notices and traffic control.</p> <p>1.3.4 If there is a likelihood of contact with overhead telephone lines, these lines should be disconnected during the New Works by British Telecom.</p> <p>1.3.5 Where work is to be carried out within 9 metres of electricity lines suspended from wooden poles or 15 metres of lines suspended from steel towers advice from Scottish and Southern Energy shall be sought.</p> <p>1.3.6 Position and depth of all pipes, cables and underground Structures shall be verified. The method of work shall take into account such items.</p> <p>1.3.7 Voids left after the removal of stumps and roots shall be filled with suitable material and compacted in compliance with Clause 612 of the Specification.</p> <p>1.3.8 Damage to trees, tree saplings, shrubs or hedges during felling shall be made good as described in BS 3998: 2010 Tree Work, Section 7.</p> <p>1.3.9 Tree work shall be avoided during the bird nesting season of March to</p> |

## Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | <p>August inclusive. During the bird nesting season tree work shall be carried out only after an inspection by the ecological clerk of works establishes that there are no nesting birds present, and only after receiving consent in writing from the Contracting Authority.</p> <p>1.3.10 Any bat roosts identified by the Company shall immediately be reported to the Contracting Authority and ecological clerk of works.</p> <p>1.3.11 No trees identified during the ecological surveys as containing confirmed bat roosts or having the potential for bat roosting shall be felled after 31 October unless authorised by Scottish Natural Heritage. No trees containing confirmed bat roosts shall be felled without the necessary licences having been obtained from the Scottish Natural Heritage. Any licences required from Scottish Natural Heritage shall be arranged by the Company once the species of bat and population size has been confirmed by a licensed bat worker.</p> <p>1.3.12 The Company shall notify the Contracting Authority and ecological clerk of works not less than 7 days in advance of felling any trees containing confirmed bat roosts or having the potential for bat roosting.</p> <p>1.3.13 The Company shall undertake a pre-felling inspection of all trees identified as containing confirmed bat roosts or having the potential for bat roosting under the supervision of a licensed bat worker. Each tree with bat roosts or potential for bat roosting shall be inspected by safest practicable means and searched for signs of bats, using a torch and endoscope where necessary, as directed by the licensed bat worker. Where no signs of bats and no potential access points are identified the tree may be felled subject to the approval of the licensed bat worker.</p> <p>1.3.14 Where felling of trees containing bat roosts is undertaken under licence and where potential access points for bats are identified, the trees shall be section felled with the feature of interest lowered gently to the ground on a rope in the presence of the licensed bat worker, searched and left on the ground for a period of 24 to 48 hours with the access point exposed to allow any roosting bats to disperse.</p> <p>1.3.15 Should any bats be found to be present in trees during felling the Company shall cease felling works in the area and immediately contact Scottish Natural Heritage (SNH), the licensed bat worker and the Contracting Authority and seek their instructions. No further works shall be undertaken on trees containing roosting bats without permission from SNH.</p> <p>1.4 Weather Conditions for Tree Work</p> <p>1.4.1 Work shall cease when trees are very wet, covered in ice or snow, or during storms or high winds except in emergencies, where any work shall be the minimum to make the situation safe.</p> <p>1.5 Grubbing up Stumps and Filling Voids</p> <p>1.5.1 All stumps and tree roots shall be grubbed up, except stumps in woodland within areas of existing vegetation to be retained, provided this does not damage trees which are being retained. If a stump cannot be removed it</p> |

Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | <p>shall be cut at least 300 millimetres below ground level, the hole shall be filled with soil, compacted, levelled and seeded.</p> <p>1.6 Chipping of Wood and Bark</p> <p>1.6.1 Small timber, twigs, bark and roots not infected by honey fungus may be chipped and left on the Site to compost at agreed locations and shall be turned over at specified intervals. The Company shall remove surplus timber from the New Works Site, unless 270AR(1.10) applies.</p> <p>1.7 Preliminary Tree Work - BS 3998: 1989</p> <p>1.7.1 The Company shall give notice of proposed tree work in conservation areas, and shall seek permission from the relevant authority where trees are protected by a Tree Preservation Order.</p> <p>1.7.2 Pruning works include the removal of dead, diseased or damaged branches, removal of heavy branches, crown lifting, crown thinning, pruning damaged tree saplings, bushes and roots and pruning and shaping of overgrown / neglected hedges.</p> <p>1.7.3 When a branch is to be removed the cut surface should be made at a fork or at the main stem and the final cut should be just outside the branch bark collar, where present. When there is not a collar the angle of the cut shall be the mirror image of the branch bark ridge (BS 3998: 1989: Page 4; 13 and Figure 1). The outline of pruned trees shall be fair and symmetrical.</p> <p>1.7.4 Sealing of the cut surface with a proprietary preparation shall be carried out when there is a high risk of fungal or bacterial infection. Table 1 of Appendix C of BS 3998 lists suitable formulations which may be used. Otherwise heartwood exposed by pruning shall be left untreated so that the surface dries out. A bitumastic or latex based paint shall be applied to the outer edge of the cut to prevent drying and dieback of the cambium. Treatment of the whole wound is for cosmetic reasons only; a thin layer of bitumastic or latex based paint or household emulsion can be applied.</p> <p>1.7.5 Heavy limbs shall be taken down in sections and shall be lowered with ropes to avoid damage to the tree and its surroundings. The method of pruning and sealing of cut surfaces shall be as prescribed.</p> <p>1.7.6 In crown lifting lower branches shall be removed to a given height above ground level in a manner described.</p> <p>1.7.7 Crown thinning involves the removal of a proportion of secondary branch growth throughout the crown to produce an open crown. Thinning shall not be too severe as it may induce fresh growth of epicormic shoots.</p> <p>1.7.8 Damaged tree saplings shall be cut back to sound wood just above a bud. Damaged bushes shall be cut to sound wood or the whole plant shall be cut to base to allow fresh growth to take over.</p> <p>1.8 Timber - Stacking</p> <p>1.8.1 Timber shall not be stacked against existing trees and shrubs to be retained. Timber stacks shall not exceed one metre high under any</p> |

Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | <p>circumstances. Timber stacks shall be constructed in such a way as to prevent the movement or slippage of timber.</p> <p>1.9 Existing Woodland</p> <p>1.9.1 The timber from native species to be felled within or adjacent to, existing woodland shall be left within the woodland for habitat enhancement, to the approval of SNH. Stumps within woodland are not to be ground down or removed.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 271AR         | <p><b>1 Existing Vegetation to be Protected</b></p> <p>1.1 Protection of existing vegetation which is to be retained shall be in accordance with BS 5837: 2005 and as follows:</p> <ul style="list-style-type: none"> <li>a) The Company shall ensure that all work is safeguarded against damage due to the carrying out of other Site operations. Should any damage or loss be caused to any existing or completed works then the Company shall reinstate and make good such damage or loss all with the acknowledgement in writing of the Contracting Authority.</li> <li>b) No existing mature trees, protected or designated landscape areas or other artefact shall be removed or cleaned without the prior written agreement of the Contracting Authority. The proposed extent of Site clearance works shall be submitted to the Contracting Authority prior to the New Works starting on the New Works Site.</li> <li>c) Trees, bushes, undergrowth and other vegetation to be preserved shall be fenced off with type CW 120 cleft chestnut pale fencing complying with BS 1722, Part 4 1986, placed in accordance with BS 5837: 2012, and shall be maintained in effective condition until the Works have been fully completed. Fences shall be erected before the Works commence. No existing trees, shrubs, or other plants shall be removed or cut without specific written instructions from the Designer. Protective fencing in accordance with BS 5837 2005 shall be erected prior to commencement of the New Works to protect the areas shown in drawings. No soil, spoil, fuel oil, chemicals, construction materials or rubbish shall be stored or tipped within the spread of existing trees, shrubs or hedges.</li> <li>d) Should any tree or shrub be mistakenly uprooted, destroyed, or in the opinion of the Contracting Authority, be damaged beyond reasonable chance of survival in its original shape due to the Company's negligence, then the Company shall provide and plant suitable replacement trees or shrubs of a similar type and age. If such replacement trees or shrubs are not obtainable, alternative trees or shrubs, acknowledged in writing by the Contracting Authority, shall be provided and planted. The Company's liability shall continue until the replacement trees and shrubs have survived the winter following the planting and have completed</li> </ul> |

## Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | <p>satisfactorily the following summer's growth.</p> <p><b>2 Management of Existing Vegetation to be Retained</b></p> <p>The Company shall manage existing vegetation to be retained in accordance with the New Works Requirements, Specific Requirements Environment, Landscape and Ecology. Clause 6.18</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 370AR         | <p><b>1 Rabbit, Hare, Deer, Otter and Badger Fencing Specifications</b></p> <p>1.1 The extent of fencing for protected fauna shall meet the requirements of SNH. The Company shall consult and comply with SNH in this respect.</p> <p>1.2 Rabbit and Hare Fencing</p> <p>1.2.1 Fences to protect planting areas from rabbits and hares shall be in accordance with the following specification:</p> <p>a) Post and mesh fence with a galvanised hexagonal wire mesh 1200 millimetres wide having maximum openings of 31 millimetres and 1.25 millimetres (18 gauge) wire. Mesh to be affixed to two galvanised line wires of minimum 4 millimetres in diameter at 900 millimetres and 150 millimetres above ground level using galvanised fixing rings every 600 millimetres on top wire and 1200 millimetres on bottom wire. Mesh to be buried to 150 millimetres depth and returned outwards from protected area. End and change of direction posts to be 125 millimetres diameter round section, 1.87 metres long and driven 770 millimetres into the ground. Strut to be 65 millimetres round section located in notch on main post and held in the ground by 0.6 metre split rail. Line posts to be 1.6 metres long and 65 millimetres square section driven 500 millimetres into the ground at 4 metre centres. Mesh also to be fixed to line posts by six staples per post.</p> <p>1.3 Deer Fencing</p> <p>1.3.1 Fences to protect planting areas from deer shall be in accordance with the following specification:</p> <p>a) 1.80 metres high timber post and 4 wire deer fence with rectangular wire mesh.</p> <p>b) Fence shall be constructed to the details on HCD Drawing H12 and BS1722 Parts 2 &amp; 3 with the following additions and amendments:-</p> <p>(i) Top rectangular wire mesh to be type C/6/90/30.</p> <p>(ii) Bottom rectangular wire mesh to be type C/8/80/15.</p> <p>(iii) Timber posts and struts are to be for a 1.8 metres high fence selected from either Table 4 or 5 from BS1722 Part 3. Timber straining posts are to be 2.90 metres length, 178 millimetres minimum diameter.</p> <p>(iv) Intermediate posts are to be set or driven into the ground to a depth of 0.6 metres. Straining posts shall be set into</p> |

Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number                           | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |        |        |        |                                         |     |          |     |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------|--------|--------|-----------------------------------------|-----|----------|-----|
|                                         | <p style="text-align: center;">the ground to a depth of 1.0 metre.</p> <ul style="list-style-type: none"> <li>(v) Struts are to be anchored in the ground in rammed backfill with a 450 x 102 x 51 millimetres timber thrust plate attached to the end of the strut.</li> <li>(vi) 4 line wires complying with the requirements of Clause 2.1 BS1722 Part 2, shall be provided set 50, 850, 1750, 1800 millimetres above ground level. The wire mesh shall be attached to the line wires to the details of Clause 3.3.2.4 BS1722 Part 2.</li> <li>(vii) Intermediate posts are to be provided at intervals not exceeding 2.75 metres.</li> <li>(viii) Existing ground must be trimmed to maintain the 50 millimetres distance between the ground and the bottom of the fence.</li> </ul> <p>1.4 Combined Otter and Badger Fencing</p> <p>1.4.1 Combined Otter and Badger fences shall be in accordance with Specification Appendix 30/12.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |        |        |        |                                         |     |          |     |
| <p><b>971 AR</b></p>                    | <p><b>1 Stone Mastic Asphalt Surface Course</b></p> <p>1.1 General</p> <p>1.1.1 Stone mastic asphalt shall comply with the general requirements of BS EN 13108 Bituminous mixtures: Material specifications and MCHW Series 700 and 900 and the specific requirements of sub-Clauses 2 to 39 of this Clause.</p> <p>1.1.2 Stone mastic asphalt shall be produced in plants that shall be registered to the BS EN ISO 9001 ‘Sector Scheme for the Production of Asphalt Mixes’, described in Appendix A.</p> <p>1.1.3 The Design for stone mastic asphalt to Clause 970AR shall be to the general requirements of Clause 942 and shall specifically comply with the requirements for wheel tracking and sensitivity to water.</p> <p>1.1.4 The Company shall declare target aggregate gradings and binder contents prior to commencement of the Operations.</p> <p>1.1.5 The nominal installation depths shall be classified into three categories as given in the table below:</p> <table border="1"> <thead> <tr> <th>Type</th> <th>Type A</th> <th>Type B</th> <th>Type C</th> </tr> </thead> <tbody> <tr> <td>Nominal installation depth (millimeter)</td> <td>&lt;18</td> <td>18 to 25</td> <td>&gt;25</td> </tr> </tbody> </table> <p>1.2 Aggregates</p> <p>1.2.1 Coarse aggregate shall be crushed rock or crushed slag complying with Clause 901.</p> | Type     | Type A | Type B | Type C | Nominal installation depth (millimeter) | <18 | 18 to 25 | >25 |
| Type                                    | Type A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Type B   | Type C |        |        |                                         |     |          |     |
| Nominal installation depth (millimeter) | <18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 18 to 25 | >25    |        |        |                                         |     |          |     |



## Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.2.2         | The shape of the coarse aggregate shall comply with a maximum flakiness index of Category FI25 as defined in BS EN 13043:2002 Aggregates for Bituminous Mixtures and Surface Treatments for Roads, Airfields and Other Trafficked Areas, clause 4.1.6.                                                                                                                                                                          |
| 1.2.3         | Fine aggregate shall comply with Clause 901 and shall comprise crushed fine aggregate derived from, rock, slag or gravel, which may be blended with not more than 50% of natural sand.                                                                                                                                                                                                                                          |
| 1.2.4         | The resistance to polishing of the coarse aggregate shall have a minimum declared PSV category specified in Appendix 7/1 in accordance with BS EN 13043:2002 Aggregates for Bituminous Mixtures and Surface Treatments for Roads, Airfields and Other Trafficked Areas, clause 4.2.3.                                                                                                                                           |
| 1.2.5         | The resistance to abrasion of coarse aggregate shall have a maximum AAV specified in Appendix 7/1 in accordance with BS EN 13043:2002 Aggregates for Bituminous Mixtures and Surface Treatments for Roads, Airfields and Other Trafficked Areas, clause 4.2.                                                                                                                                                                    |
| 1.3           | Filler                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 1.3.1         | Added filler aggregate shall be hydrated lime, crushed limestone or Portland Cement, in accordance with the requirements of BS EN 13108-4, Bituminous mixtures: Material specifications , Part 4: Hot Rolled Asphalt and shall be not less than 2% by mass of total aggregate.                                                                                                                                                  |
| 1.4           | Binder                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 1.4.1         | Bitumen shall comply with BS EN 12591:2000 Bitumen and Bituminous Binders: Specifications for Paving Grade Bitumens or BS 3690-3:1990 Bitumens for Building and Civil Engineering: Specification for Mixtures of Bitumen with Pitch, Tar and Trinidad Lake Asphalt, and shall be produced in plants that shall be registered to BS EN ISO 9001 'Sector Scheme for the Supply of Paving Grade Binders', described in Appendix A. |
| 1.4.2         | The said binder shall not be harder than penetration reference 50 (paving grade 40/60).                                                                                                                                                                                                                                                                                                                                         |
| 1.4.3         | If the deformation resistance requirement in sub-Clause 18 of this Clause shall not be required, then the binder penetration reference shall be as specified in Appendix 7/1.                                                                                                                                                                                                                                                   |
| 1.5           | Binder Modifiers                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1.5.1         | Binder modifiers pre-blended with bitumen or binder modifiers, including but not limited to natural or man-made fibres, which shall be added or blended with base bitumen complying with BS EN 12591:2000 Bitumen and Bituminous Binders: Specifications for Paving Grade Bitumens of the stated penetration range at the mixing plant shall have a British Board of Agrément HAPAS Roads and Bridges Certificate.              |
| 1.5.2         | In the event that no such certificates have been issued, binder modifiers, pre-blended modified binders or additives shall not be used without the prior written approval of the Overseeing Organisation.                                                                                                                                                                                                                       |
| 1.5.3         | In the event that no British Board of Agrément HAPAS Roads and Bridges                                                                                                                                                                                                                                                                                                                                                          |

## Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | <p>Certificates have been issued, the Company shall provide with its Design a data sheet giving details of the properties of the modified binders or additives proposed including those referred to in Appendix 7/1.</p> <p>1.5.4 The Company shall provide the rheological product identification data for pre-blended modified binders in accordance with Clause 956 and cohesion in accordance with Clause 957</p> <p>1.6 Mixture</p> <p>1.6.1 The binder drainage of the loose mixture at the target composition at a temperature of 175°C in accordance with <a href="#">BS 594987:2010</a> shall not be more than 0.3% by total mass of mixture.</p> <p>1.6.2 The agreed binder content for the mixture shall be the target binder content <math>\pm 0.6\%</math>.</p> <p>1.7 Job Mixture Approval</p> <p>1.7.1 Details of the proposed mixture Design from each asphalt mixing plant shall be submitted to the Overseeing Organisation.</p> <p>1.7.2 The information may be obtained from either a job mixture trial or from the use of the mixture on a previous contract carried out in accordance with this Clause, and shall include all the following particulars:</p> <ul style="list-style-type: none"> <li>a) bitumen penetration reference;</li> <li>b) quantities of binder and aggregate;</li> <li>c) aggregate source and grading;</li> <li>d) proprietary name and generic type of binder modifier;</li> <li>e) quantity of any binder modifier, including natural or man-made fibres added at the mixer; and</li> <li>f) modified binder and mixture data requirements specified in Appendix 7/1.</li> </ul> <p>1.7.3 If a modified binder including but not limited to any proportion of the modifier shall not be fully recovered on analysis for determination of binder content details of alterations to the test method or the correction necessary to the results together with supporting data shall be submitted to the Overseeing Organisation with the proposed mixture Design for prior written consent by the Overseeing Organisation to implement them.</p> <p>1.7.4 The mixture shall be approved in writing by the Overseeing Organisation as the job standard mixture provided that:</p> <ul style="list-style-type: none"> <li>a) the mixture Design proposed complies with sub-Clauses 1 and 3 of this Clause;</li> <li>b) information has been submitted in accordance with sub-Clauses 9 and 10 of this Clause;</li> <li>c) information submitted in accordance with sub-Clause 16 of this Clause has been approved in writing by the Overseeing</li> </ul> |

## Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | <p style="text-align: center;">Organisation.</p> <p>1.7.5 If the mix Design or constituent materials of a job standard mixture shall be changed by the Company, details of the revised mixture shall be submitted for written approval in accordance with sub-Clause 17 of this Clause.</p> <p>1.7.6 Job mixture trials may be carried out on or off the New Works Site, however material laid for a job mixture trial on the New Works Site which complies with this Specification may form part of the binder/regulating course in the permanent works.</p> <p>1.7.7 If carried out off site, trials may be arranged independently or in conjunction with other works.</p> <p>1.8 Mixing</p> <p>1.8.1 Unless otherwise specified by the supplier of the modified binder, stone mastic asphalt shall be mixed at a temperature in accordance with the requirements of BS EN 13108 Bituminous mixtures: Material specifications &amp; PD 6691, for the penetration reference of the bitumen.</p> <p>1.8.2 This shall be done in such manner that a homogeneous mixture of aggregate, filler, bitumen and additive results.</p> <p>1.8.3 At the time of mixing, the coarse aggregate shall be in a surface dry condition.</p> <p>1.9 Transportation</p> <p>1.9.1 The transportation of stone mastic asphalt shall be in accordance with sub-Clause 901.3.</p> <p>1.10 Permanent Works</p> <p>1.10.1 When specified in Appendix 7/1, sampling and testing shall be carried out to establish compliance of material laid in the permanent works.</p> <p>1.11 Sampling from the Laid Material</p> <p>1.11.1 Samples of uncompacted material shall be taken from the paver as near to where the cores shall be taken as shall be practicable, in accordance with BS EN 12697 Bituminous mixtures: Test methods for hot mix asphalt, Part 27: Sampling.</p> <p>1.11.2 Six 200 millimetre diameter cores shall be cut, where practical from the centre of the Lane out of material from each mixing plant:</p> <ul style="list-style-type: none"> <li>a) from material laid specially in a job mixture approval trial;</li> <li>b) from the first 1 kilometre length of stone mastic asphalt from a mixing plant laid in the permanent works; or</li> <li>c) within 3 days of laying stone mastic asphalt from a mixing plant in the permanent works, where less than 1 kilometre length has been laid whichever occurs first.</li> </ul> <p>1.11.3 The 200 millimetre diameter cores shall be cut within 3 days of laying the material unless they have been cut under the requirements of sub-Clause</p> |

## Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                           |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | 35 of this Clause.                                                                                                                                                                                                                                                                                                                                               |
| 1.11.4        | The cores shall be transported as soon as possible to the laboratory.                                                                                                                                                                                                                                                                                            |
| 1.11.5        | If the storage period shall be less than 4 days, the storage temperature shall be within the range 0°C to 25°C.                                                                                                                                                                                                                                                  |
| 1.11.6        | For storage beyond 4 days, the temperature shall be within the range 0°C to 5°C. Cores shall be stored on a flat face on a horizontal surface, and shall not be stacked.                                                                                                                                                                                         |
| 1.11.7        | Site storage of cores where unavoidable and conditions of transportation shall be as close as shall be practicable to the laboratory conditions.                                                                                                                                                                                                                 |
| 1.11.8        | The storage temperature and times, including whilst cores are on the New Works Site shall be recorded.                                                                                                                                                                                                                                                           |
| 1.11.9        | Three pairs of 150 millimetre diameter cores shall be cut at the same chainages as the 200 millimetre diameter core.                                                                                                                                                                                                                                             |
| 1.11.10       | One core of each pair shall be taken from the centre of the lane adjacent to the 200 millimetre diameter core and one whose centre shall be between 500 millimetre and 1000 millimetre from the edge of the mat.                                                                                                                                                 |
| 1.11.11       | Cores shall be taken after the stone mastic asphalt has cooled to ambient temperature and not less than 12 hours after laying and before trafficking unless otherwise specified in Appendix 7/1.                                                                                                                                                                 |
| 1.11.12       | The walls and base of all holes from which core samples shall have been cut shall be painted with hot bitumen or cold applied polymer modified intermediate or premium grade bitumen emulsion containing normally 60% binder immediately prior to making good.                                                                                                   |
| 1.11.13       | Core holes shall be backfilled with materials compacted to refusal with a circular headed vibrating hammer in layers not exceeding 75 millimetre thick.                                                                                                                                                                                                          |
| 1.11.14       | Hot base material shall be similar to existing pavement.                                                                                                                                                                                                                                                                                                         |
| 1.11.15       | In the permanent works, after the first 6 cores and where the required thickness of the material exceeds 25 millimetre for material from each mixing plant not less than one pair of 200 millimetre m diameter cores shall be cut from the centre of the Lane every 1 Lane kilometre laid a day's production if less than 1 Lane kilometre shall have been laid. |
| 1.12          | Tests and Calculations                                                                                                                                                                                                                                                                                                                                           |
| 1.12.1        | For each uncompacted sample the compositional analysis shall be carried out in accordance with BS EN 12697 Bituminous mixtures: Test methods for hot mix asphalt, Part 1: Soluble binder content & Part 2: Determination of particle size distribution corrected by any correction factor approved under sub-Clause 16 of this Clause.                           |
| 1.12.2        | Each six consecutive 200 millimetre diameter cores of material from the same mixing plant shall form a set of cores on a running basis.                                                                                                                                                                                                                          |
| 1.12.3        | For each set the wheeltracking rate and rut depth shall be determined in accordance with the procedure in BS 598-110:1998 Sampling and                                                                                                                                                                                                                           |

Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | <p>Examination of Bituminous Mixtures for Roads and Other Paved Areas: Methods of Test For the Determination of Wheel-tracking Rate and Depth, at the test temperature specified in Appendix 7/1.</p> <p>1.12.4 For each 150 millimetre diameter core the bulk density shall be determined in accordance with the procedure in BS EN 12697 Bituminous mixtures: Test methods for hot mix asphalt, Part 6: Determination of bulk density of bituminous specimens.</p> <p>1.12.5 The bulk density at a chainage shall be the mean from the two cores taken at a chainage.</p> <p>1.12.6 Subsequent to determining the bulk density, the maximum density shall be determined from the pair of the cores in accordance with BS EN 12697-5:2002 Bituminous Mixtures: Test Methods for Hot Mix Asphalt: Determination of the Maximum Density.</p> <p>1.12.7 The air void content of each pair of 150 millimetre diameter cores shall be calculated to <math>\pm 0.1\%</math> as follows: <math>100\% \times (1 - \frac{\rho}{\rho_{Max}})</math></p> <p style="padding-left: 40px;">Air voids content = <math>(1 - \frac{\rho}{\rho_{Max}}) \times 100\%</math></p> <p style="padding-left: 40px;">where: <math>\rho</math> shall be the bulk density in accordance with BS EN 12697 Bituminous mixtures: Test methods for hot mix asphalt, Part 6: Determination of bulk density of bituminous specimens (Mg/m<sup>3</sup>);</p> <p style="padding-left: 40px;">and <math>\rho_{Max}</math> shall be the maximum density in accordance with BS EN 12697-5: Bituminous Mixtures: Test Methods for Hot Mix Asphalt: Determination of the Maximum Density (Mg/m<sup>3</sup>).</p> <p>1.13 Compliance Requirements</p> <p>1.13.1 When determined in accordance with BS EN 12697 Bituminous mixtures: Test methods for hot mix asphalt, Part 1: Soluble binder content &amp; Part 2: Determination of particle size distribution, the compositional analysis shall demonstrate compliance with following:</p> <ul style="list-style-type: none"> <li>a) the binder content on analysis shall not differ from the target binder content declared by the Company by more than <math>\pm 0.6\%</math>; and</li> <li>b) the aggregate grading shall not differ from that declared by the Company.</li> </ul> <p>1.13.2 Deformation resistance shall be determined in accordance with the requirements of Clause 929, which refers to PD 6691 &amp; BS 594987 and the deformation values specified in Appendix 7/1.</p> <p>1.13.3 The air voids content shall be not more than 6% for a pair of cores at a chainage and shall be not more than 4% for the mean of any six consecutive determinations from pairs of cores from material from the same mixing plant.</p> <p>1.13.4 When the stone mastic asphalt shall be being used as a regulating course at thicknesses below 30 millimetres the appropriate limiting void contents shall be 8% and 6% respectively.</p> <p>1.14 Reporting Results</p> |

## Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| <b>Clause Number</b> | <b>Title and Written Text</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      | <p>1.14.1 Where specified in Appendix 1/5 that the Company shall be responsible for testing, the individual determinations including location of samples and results from all tests shall be given to the Contracting Authority in writing within two weeks of the material having been laid.</p> <p>1.15 Surface Preparation</p> <p>1.15.1 Existing surfaces shall be prepared in accordance with the requirements of BS 594987 Asphalt for roads and other paved areas – Specification for transport, laying, compaction and type testing protocols, and Series 700 Clauses.</p> <p>1.15.2 Bond coats shall be in accordance with Clause 920 except that where the thickness of the stone mastic asphalt shall be less than 20 millimetres, only polymer modified bond coats shall be used.</p> <p>1.16 Laying</p> <p>1.16.1 Unless required otherwise in Appendix 7/1, stone mastic asphalt shall be laid and compacted in accordance with the requirements of Clause 901, to the thickness stated in Appendix 7/1.</p> <p>1.17 Weather Conditions</p> <p>1.17.1 The weather conditions specified in Clause 945 shall not apply to stone mastic asphalt laid in accordance with this Clause.</p> <p>1.17.2 The manufacturer's recommendations for the use of modified binders in various weather conditions for laying and compaction temperatures of the modified stone mastic asphalt shall be submitted to the Contracting Authority with details of the modified binder required under sub-Clause 9 of this Clause and shall include information on early trafficking particularly in hot weather.</p> <p>1.18 Temporary Trafficking</p> <p>1.18.1 The Company shall ensure the pavement material has adequately cooled and hardened before it shall be subjected to temporary traffic.</p> <p>1.18.2 Unless otherwise agreed in writing by the Contracting Authority the material shall not be trafficked if its surface temperature exceeds 25°C unless the maximum temperature within the mat has fallen below 35°C.</p> |
| <b>973 AR</b>        | <p><b>1 Overband Sealing</b></p> <p>1.1 The Company shall use systems holding Highway Authorities Product Approval Scheme certification and the system shall be applied in accordance with Highway Authorities Product Approval Scheme requirements</p> <p>1.2 The minimum skid resistance value of the overband material shall be 60 measured by the skid resistance pendulum method.</p> <p>1.3 All material removed from the cracks and joints shall be removed to a licensed waste disposal site.</p> <p>1.4 All loose material shall be removed off the Unit to a licensed waste</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

## Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | disposal site or recycling centre.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>976 AR</b> | <p><b>1 Pavement Cores</b></p> <p>1.1 Nominal 150 millimetre diameter cores, required for sampling and testing at the frequencies stated in Appendix 1/5, shall be taken using a suitable coring machine in accordance with BS 598:Part100.</p> <p>1.2 For each core extracted a Roadside Record Sheet (RRS1) as provided in this Appendix 0/1 shall be completed in order to record the site location, coring conditions and condition of the core.</p> <p>1.3 All cores shall be labelled, protected, transported and stored according to the independent testing organisation's quality procedures.</p> <p>1.4 In the laboratory each core, prior to any testing, shall be examined, photographed and the information recorded on a Core Record Sheet (CRS1) as provided in this Appendix 0/1. The cores shall be photographed on a white background with the project, location and core number clearly shown together with the units of measurement that will be easily identifiable on the size of photograph produced.</p> <p><b>1.5</b> The records are to be stored within the Company's quality records and made available to the Contracting Authority when required.</p> |

Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

**ROADSIDE RECORD SHEET (RRS1)**

**General**

|                             |  |
|-----------------------------|--|
| Project Name                |  |
| Coring Date                 |  |
| Core Number                 |  |
| Chainage                    |  |
| Road Name                   |  |
| Road Type (See Note 1)      |  |
| Lane Direction (See Note 2) |  |
| Lane Number (See Note 3)    |  |
| Weather Conditions          |  |

**Pavement Coring Description**

|                                                                 |      |           |                                       |                  |
|-----------------------------------------------------------------|------|-----------|---------------------------------------|------------------|
| Did the core barrel lock / jam whilst cutting pavement?         | Yes  | No        | If Yes, at what depth?<br>Depth (mm): |                  |
| Were there difficulties in extracting the core from the barrel? | Yes  |           | No                                    |                  |
| Condition of core<br>(Tick as appropriate)                      | Good | De-bonded | Shattered                             | Partial recovery |
|                                                                 |      |           |                                       |                  |
| Depth of coring                                                 |      |           |                                       |                  |
| Core length                                                     |      |           |                                       |                  |
| Any additional information on the core not included above       |      |           |                                       |                  |

Notes:

1. Insert as appropriate i.e. D2AP, S2 etc.
2. Insert eastbound, westbound, northbound, and southbound as appropriate.
3. Insert appropriate descriptor e.g. lane 1 (nearside), lane 2 (offside), hard shoulder.



Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

**Core Record Sheet (CRS1)**

| Project Name                                                                                                             |             |                |                   |          | Road type<br>(See Note 1)      |      |          |
|--------------------------------------------------------------------------------------------------------------------------|-------------|----------------|-------------------|----------|--------------------------------|------|----------|
| Road Name                                                                                                                |             |                |                   |          | Lane Direction<br>(See Note 2) |      |          |
| Coring Date                                                                                                              |             |                |                   |          | Lane Number<br>(See Note 3)    |      |          |
| Core Number                                                                                                              |             |                |                   |          | Chainage                       |      |          |
| Layer                                                                                                                    | Layers      |                |                   |          | Aggregate                      |      | Comments |
| Number                                                                                                                   | Top<br>(mm) | Bottom<br>(mm) | Thickness<br>(mm) | Material | Maximum<br>size (mm)           | Type |          |
|                                                                                                                          |             |                |                   |          |                                |      |          |
|                                                                                                                          |             |                |                   |          |                                |      |          |
|                                                                                                                          |             |                |                   |          |                                |      |          |
|                                                                                                                          |             |                |                   |          |                                |      |          |
|                                                                                                                          |             |                |                   |          |                                |      |          |
|                                                                                                                          |             |                |                   |          |                                |      |          |
| <p>Insert picture of core<br/>HERE</p> <p><i>(The units of measurement should be clearly seen on the photograph)</i></p> |             |                |                   |          |                                |      |          |

Notes:

1. Insert as appropriate i.e. D2AP, S2 etc.
2. Insert eastbound, westbound, northbound, and southbound as appropriate.
3. Insert appropriate descriptor e.g. lane 1 (nearside), lane 2 (offside), hard shoulder.

## Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1270AR        | <p><b>1 Passively Safe Sign Posts</b></p> <p>1.1 Passively safe sign posts shall be in accordance with BS EN 12767: 2007 erected in accordance with the manufacturers instructions. Conforms to EN61347-2-11 Part 1;</p> <p>a)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1272AR        | <p><b>1 Chart Node and Section Markers</b></p> <p>1.1 Cored thermoplastic road markers shall be installed as chart nodes using the following method:</p> <p>a) A 100 millimetre diameter x 20 millimetre deep socket shall be formed using a central pilot bit surrounded by an annular bit. The pilot bit permits drilling of an annulus by the annular bit in a precise location by guiding the annular bit.</p> <p>b) The base of the pocket after breaking out the surface material shall be left jagged. This jagged base assists in the retention of the stud in the pocket.</p> <p>c) The pocket shall be filled with hot fluid thermoplastic material to the uppermost edge of the pocket projecting slightly above the road surface. This projection depends on the surface tension of the material. The material is then allowed to cool and set to form a stud.</p> <p>d) The material shall consist of a plastic resin with the white filler and reflective glass particles to BS 3262. This is the same material as is used for white lining purposes.</p> <p>1.2 Notwithstanding any other requirements of the Agreement, record drawings of the chart node locations at a scale of 1:500 shall be provided to the Contracting Authority within 7 days of the issue of the Final Completion Certificate for the New Works. The record drawings shall locate the chart nodes as a series of dimensions from carriageway features. The local and national grid co-ordinates of all chart nodes shall be detailed on the record drawings.</p> |
| 1370AR        | <p><b>1 Lamp Disposal</b></p> <p>1.1 The Company shall collect, transport and dispose of waste lamps in accordance with the requirements of the Waste Electrical and Electronic Equipment Regulations.</p> <p>1.1.1</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1470AR        | <p><b>1 Temporary Overhead Feed to Lighting Units</b></p> <p>1.1 No Temporary overhead cable shall be installed until the lighting columns involved have been assessed as being suitable for the additional mechanical loading placed on them.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

## Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | <p>1.2 Cables used for any temporary overhead feed to lighting units or luminaries shall consist of sheathed or armoured cables supported by a steel catenary wire and shall be installed in accordance with the requirements of BS7671:2008.</p> <p>The minimum height above ground of the span shall, according to the location, be as follows:</p> <ul style="list-style-type: none"> <li>(i) 10 metres for Trunk Roads, and</li> <li>(ii) 5.8 metres for all other roads and road crossings.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>1670AR</b> | <p><b>1 Static Load Testing of Piles</b></p> <p>1.1 Further to Clause 1609:</p> <ul style="list-style-type: none"> <li>a) The Company shall undertake a pile load testing programme that: <ul style="list-style-type: none"> <li>(i) is consistent with section 7.5 of BS EN 1997-1:2004</li> <li>(ii) is consistent with the recommendations given in section C15 of the Guidance Notes in Part C of the ICE Specification for Piling and Embedded Walls 2nd Edition</li> <li>(iii) takes due account of the range of ground conditions encountered at the foundation locations</li> </ul> </li> <li>b) As a minimum this shall include a maintained load test on at least one full size instrumented preliminary trial pile of the largest diameter proposed to at least the calculated ultimate resistance to validate the design method adopted. The preliminary trial pile(s) shall be constructed using the same equipment and techniques that are adopted for the works piles.</li> </ul> <p>1.2 Trial piles shall be instrumented with strain gauges and extensometers with an appropriate degree of redundancy such that the load distribution down the pile during the test can be determined.</p> <p>1.3 Static load testing using the bi-directional method is permitted. If the Company proposes to adopt the bi-directional method full details of the design and construction of the preliminary trial pile(s) and associated instrumentation shall be given in Appendix 16/9. This shall include:</p> <ul style="list-style-type: none"> <li>a) the test procedure and load increments to be adopted;</li> <li>b) the measurements that will be made during the test; and</li> <li>c) the method to be used to interpret the results of the test.</li> </ul> <p>1.4 Preliminary trial piles shall be constructed and tested sufficiently in advance of the main works for the results to be evaluated and the design modified if necessary.</p> <p>1.5 A report on the preliminary pile tests shall be submitted which shall include all the information required in sub Clauses 36 and 37 of Clause 1609 together with an interpretation of the results and any implications</p> |

Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | <p>for the pile design.</p> <p>1.6 Preliminary trial piles are not permitted to be incorporated into the Permanent Works.</p> <p>1.7 The Company shall complete Appendix 16/9 to include</p> <ul style="list-style-type: none"> <li>a) the overall pile testing strategy in relation to verification of the pile design and partial resistance factors and model factors to be adopted;</li> <li>b) the numbers and types of static load tests to be carried out;</li> <li>c) the proposed locations of preliminary trial piles;</li> <li>d) whether additional location specific ground investigation is required;</li> <li>e) the programme for installation and testing; and</li> <li>f) details of the instrumentation to be installed.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>1671AR</b> | <p><b>1 Pile Integrity Tests</b></p> <p>1.1 Pile Integrity Tests</p> <p>1.1.1 Further to Clause 1608:</p> <ul style="list-style-type: none"> <li>a) The Company shall carry out a programme of integrity testing of piles. This shall include use of one or more of the following method on all piles: <ul style="list-style-type: none"> <li>(i) Impulse Method;</li> <li>(ii) Sonic Echo Frequency Response or Transient Dynamic steady state vibration method.</li> </ul> </li> <li>b) In addition to the above enhanced integrity testing shall be undertaken as follows: <ul style="list-style-type: none"> <li>(i) Cross hole sonic logging in all bored cast in situ piles over the full length of the shaft. The number of logging tubes shall be not less than 2.5 times the pile diameter in metres with a minimum of four.</li> <li>(ii) Coring of the lower part of the concrete shaft and contact between the pile base and rock in rock socket piles where end bearing resistance is considered in the design. The coring shall be used to demonstrate the cleanliness of the contact (concrete to rock) and that the rock is undisturbed. Core recovery shall be 100%. Core dimensions shall be at least 0.5 metres of concrete, 1.5 metres of rock both with a diameter of at least 100 millimetres. The resulting bore shall be backfilled with cement grout. This requirement is in addition to that in Clause 1673 AR below.</li> <li>(iii) The Company shall complete Appendix 16/8 with</li> </ul> </li> </ul> |

## Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | <p>detailed scope of integrity testing.</p> <p>(iv) All piles with a diameter greater than or equal to 900mm shall be tested.</p> <p>(v) Piles with a diameter less than 900mm shall be sample tested, at a frequency of one pile tested in every four piles, or two piles tested per discrete foundation (pile cap), whichever is greater.</p> <p>1.2 Dynamic Pile Testing</p> <p>1.2.1 Further to Clause 1608:</p> <p>a) If dynamic pile testing is proposed it shall be calibrated against static load tests carried out on comparable piles (i.e. of the same type and similar size constructed in similar ground conditions at the same site using the same installation criteria). Restrike tests shall be carried out unless it has been demonstrated that relaxation following the end of driving is not significant.</p> <p>b) The limitations of dynamic pile testing set out in section C14 of the Guidance Notes in Part C of the ICE Specification for Piling and Embedded Walls 2nd Edition shall be taken into account.</p> <p>1.3 Quasi Static (Rapid Loading) Pile Testing</p> <p>1.3.1 If quasi static testing is proposed to be used it shall be calibrated against static load tests carried out on comparable piles (i.e. of the same type and similar size constructed in the same ground conditions at the same site using the same installation criteria).</p> <p>1.3.2 The limitations of quasi static pile testing set out in section C14 of the Guidance Notes in Part C of the ICE Specification for Piling and Embedded Walls 2<sup>nd</sup> Edition shall be taken into account.</p> |
| <b>1672AR</b> | <p><b>1 Drilling Fluid</b></p> <p>1.1 If drilling fluid other than water is proposed for bored piles, constructed the Company shall include in Appendix 16/18 details of the methods to be adopted to avoid contamination of the ground. The use of drilling fluid other than water shall only be permitted where the Company has obtained prior approval from the Scottish Environment Protection Agency ("SEPA").</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>1673AR</b> | <p><b>1 Ground Investigation</b></p> <p>1.1 If rock socket piles are required to mobilise base resistance under reversible or irreversible serviceability limit state ("SLS") load combinations a borehole shall be made at each pile position prior to pile construction to verify the rock quality at the proposed founding level. Continuous cores shall be recovered from two pile diameters above pile toe level to two pile diameters below pile toe level and appropriate in situ and / or laboratory testing carried out. Core diameter shall be at least</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

## Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | <p>100 millimetres. The resulting bore shall be backfilled with cement grout.</p> <p>1.2 Borehole frequency shall be as follows:</p> <p>1.2.1 All piles with a diameter greater than or equal to 900mm shall have a borehole at each pile position.</p> <p>1.2.2 Piles with a diameter less than 900mm shall have borehole(s) on a sample basis, at a frequency of one borehole for every ten piles, or two boreholes per discrete foundation (pile cap), whichever is greater. This frequency shall increase if the results of rock coring show significant variability.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>1674AR</b> | <p><b>1 Geotechnical Reporting</b></p> <p>1.1 The Company shall update the Ground Investigation Report(s) to take account of any additional ground investigations or other relevant additional information providing justification for any changes made.</p> <p>1.2 The Company shall update their Geotechnical Design Reports to “for construction” status to take account of any relevant additional information providing justification for any changes made when compared to their original Geotechnical Design Report(s) with contents as per Clause 2.8 of BS EN 1997-1:2004 along with the following additional requirements:</p> <p>a) The following is added to Clause 2.8(3) of BS EN 1997-1:2004 after “...including actions”:</p> <ul style="list-style-type: none"> <li>(i) characteristic values of pile resistances, including justification, as appropriate;</li> <li>(ii) design values of pile resistances, including justification, as appropriate; and</li> <li>(iii) characteristic value of soil and rock properties, including justification, as appropriate.</li> </ul> <p>b) The modified Clause 2.8(3) of BS EN 1997-1:2004 shall be considered to be a principle in the context of the Eurocodes, i.e. 2.8(3)P.</p> <p>1.3 Following completion of construction the Company shall provide a full close-out report of the as-built Structures. The contents of the close-out report shall include, but not be limited to, the following:</p> <ul style="list-style-type: none"> <li>a) As-built location and geometry of all completed New Works including any Temporary Works left, with permission of the Contracting Authority, in-situ;</li> <li>b) Construction records for all Structures;</li> <li>c) All integrity test results;</li> <li>d) All strength measurement test results on materials (concrete cylinder / cube etc.) for Permanent Works and, with permission of</li> </ul> |

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number   | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |           |                |                 |                 |                 |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------|----------------|-----------------|-----------------|-----------------|
|                 | <p style="text-align: center;">the Contracting Authority, Temporary Works left in-situ; and</p> <p>e) All non-conformance report and completed close out documentation.</p> <p>1.4 The close out report shall be accompanied by extracts from the geotechnical design reports as per requirements in BS EN 1997- 1:2004 Clause 2.8(6)P.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |           |                |                 |                 |                 |
| <b>1675AR</b>   | <p><b>1 Geotechnical Categorisation</b></p> <p>1.1 The Company shall provide a list of Geotechnical Categories (BS EN 1997-1: 2004, Clause 2.1) for all geotechnical related Structures (cuttings, embankments, retaining walls, foundations) in the project. The default Category shall be taken to be 3 unless justification for a lower category is provided.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        |           |                |                 |                 |                 |
| <b>1770AR</b>   | <p><b>1 Construction Tolerances in Structural Concrete</b></p> <p>1.1 General</p> <p>1.1.1 Notwithstanding any tolerances stated in the DMRB, British and European Standards the following tolerances shall be adopted in the design, execution and completion of the New Works.</p> <p>1.1.2 <b>In-Situ Concrete</b></p> <p>1.1.2.1 The maximum deviation of hardened concrete surfaces prior to the removal of formwork shall not be greater than three millimetres in three metres (which tolerance shall not be cumulative) nor greater than two millimetres in one metre. Of the foregoing deviations, not more than two millimetres shall occur at a formwork joint. The overall standard of workmanship to be achieved shall be such that the lines of the finished surfaces shall be smoothly continuous.</p> <p>1.1.2.2 Where concrete surfaces are not permanently exposed, the maximum deviation of the finished concrete surfaces shall not be greater than six millimetres in three metres (which tolerance shall not be cumulative).</p> <p>1.1.3 <b>Precast Concrete</b></p> <p>1.1.3.1 For members other than pre-stressed pre-tensioned members, the length, cross-section dimensions, straightness, squareness, twist and flatness of precast concrete shall be measured at 28 ± 2 days after casting. Unless otherwise stated, the allowable dimensional variations shall not exceed the following:</p> <p>a)</p> <table border="1"> <thead> <tr> <th>Length</th> <th>Variation</th> </tr> </thead> <tbody> <tr> <td>Up to 3 metres</td> <td>± 6 millimetres</td> </tr> <tr> <td>3 to 4.5 metres</td> <td>± 9 millimetres</td> </tr> </tbody> </table> | Length | Variation | Up to 3 metres | ± 6 millimetres | 3 to 4.5 metres | ± 9 millimetres |
| Length          | Variation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |        |           |                |                 |                 |                 |
| Up to 3 metres  | ± 6 millimetres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |        |           |                |                 |                 |                 |
| 3 to 4.5 metres | ± 9 millimetres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |        |           |                |                 |                 |                 |

Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number                                   | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                |                  |                                          |                 |                        |                 |                                                 |                  |                                          |                 |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------|------------------------------------------|-----------------|------------------------|-----------------|-------------------------------------------------|------------------|------------------------------------------|-----------------|
|                                                 | <table border="1" style="margin-left: 40px;"> <tr> <td style="width: 60%;">4.5 to 6 metres</td> <td style="text-align: center;">± 12 millimetres</td> </tr> <tr> <td>Additional for every subsequent 6 metres</td> <td style="text-align: center;">± 6 millimetres</td> </tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 4.5 to 6 metres                | ± 12 millimetres | Additional for every subsequent 6 metres | ± 6 millimetres |                        |                 |                                                 |                  |                                          |                 |
| 4.5 to 6 metres                                 | ± 12 millimetres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                |                  |                                          |                 |                        |                 |                                                 |                  |                                          |                 |
| Additional for every subsequent 6 metres        | ± 6 millimetres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                |                  |                                          |                 |                        |                 |                                                 |                  |                                          |                 |
|                                                 | <p>b) Cross section (each direction)</p> <table border="1" style="margin-left: 40px;"> <thead> <tr> <th style="text-align: center;">Length</th> <th style="text-align: center;">Variation</th> </tr> </thead> <tbody> <tr> <td>Up to 500 millimetres</td> <td style="text-align: center;">± 6 millimetres</td> </tr> <tr> <td>500 to 750 millimetres</td> <td style="text-align: center;">± 9 millimetres</td> </tr> <tr> <td>Additional for every subsequent 250 millimetres</td> <td style="text-align: center;">± 3 millimetres</td> </tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Length                         | Variation        | Up to 500 millimetres                    | ± 6 millimetres | 500 to 750 millimetres | ± 9 millimetres | Additional for every subsequent 250 millimetres | ± 3 millimetres  |                                          |                 |
| Length                                          | Variation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                |                  |                                          |                 |                        |                 |                                                 |                  |                                          |                 |
| Up to 500 millimetres                           | ± 6 millimetres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                |                  |                                          |                 |                        |                 |                                                 |                  |                                          |                 |
| 500 to 750 millimetres                          | ± 9 millimetres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                |                  |                                          |                 |                        |                 |                                                 |                  |                                          |                 |
| Additional for every subsequent 250 millimetres | ± 3 millimetres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                |                  |                                          |                 |                        |                 |                                                 |                  |                                          |                 |
|                                                 | <p>c) Straightness or bow (deviation from intended line)</p> <table border="1" style="margin-left: 40px;"> <thead> <tr> <th style="text-align: center;">Length</th> <th style="text-align: center;">Variation</th> </tr> </thead> <tbody> <tr> <td>Up to three metres</td> <td style="text-align: center;">± 6 millimetres</td> </tr> <tr> <td>3 to 6 metres</td> <td style="text-align: center;">± 9 millimetres</td> </tr> <tr> <td>6 to 12 metres</td> <td style="text-align: center;">± 12 millimetres</td> </tr> <tr> <td>Additional for every subsequent 6 metres</td> <td style="text-align: center;">± 6 millimetres</td> </tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Length                         | Variation        | Up to three metres                       | ± 6 millimetres | 3 to 6 metres          | ± 9 millimetres | 6 to 12 metres                                  | ± 12 millimetres | Additional for every subsequent 6 metres | ± 6 millimetres |
| Length                                          | Variation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                |                  |                                          |                 |                        |                 |                                                 |                  |                                          |                 |
| Up to three metres                              | ± 6 millimetres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                |                  |                                          |                 |                        |                 |                                                 |                  |                                          |                 |
| 3 to 6 metres                                   | ± 9 millimetres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                |                  |                                          |                 |                        |                 |                                                 |                  |                                          |                 |
| 6 to 12 metres                                  | ± 12 millimetres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                |                  |                                          |                 |                        |                 |                                                 |                  |                                          |                 |
| Additional for every subsequent 6 metres        | ± 6 millimetres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                |                  |                                          |                 |                        |                 |                                                 |                  |                                          |                 |
|                                                 | <p>d) Squareness. When considering the squareness of a corner, the longer of the two adjacent sides being checked shall be taken as the base line. The shorter side shall not vary in its distance from a perpendicular so that the difference between the greatest and shortest dimensions exceeds the following:</p> <p style="margin-left: 20px;">(i) Length of shorter sides:</p> <table border="1" style="margin-left: 40px;"> <tr> <td style="width: 60%;">Up to and including 1.2 metres</td> <td style="text-align: center;">6 millimetres</td> </tr> <tr> <td>Over 1.2 metres but less than 1.8 metres</td> <td style="text-align: center;">9 millimetres</td> </tr> <tr> <td>1.8 metres and over</td> <td style="text-align: center;">12 millimetres</td> </tr> </table> <p style="margin-left: 40px;">When considering squareness, any error due to lack of straightness shall be ignored; squareness shall be measured with respect to the straight lines that are closest to parallel with the features being checked.</p> <p style="margin-left: 40px;">When the nominal angle is other than 90°, the included angle between check lines shall be varied accordingly.</p> | Up to and including 1.2 metres | 6 millimetres    | Over 1.2 metres but less than 1.8 metres | 9 millimetres   | 1.8 metres and over    | 12 millimetres  |                                                 |                  |                                          |                 |
| Up to and including 1.2 metres                  | 6 millimetres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                |                  |                                          |                 |                        |                 |                                                 |                  |                                          |                 |
| Over 1.2 metres but less than 1.8 metres        | 9 millimetres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                |                  |                                          |                 |                        |                 |                                                 |                  |                                          |                 |
| 1.8 metres and over                             | 12 millimetres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                |                  |                                          |                 |                        |                 |                                                 |                  |                                          |                 |



Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | <p style="padding-left: 40px;">(ii) Twist. Any corner shall not be more than the deviation stated from the plane containing the other three corners:<br/>                     Up to 60 millimetres wide and up to 6 metres in length: 6 millimetres<br/>                     Over 600 millimetres wide and for any length: 12 millimetres</p> <p style="padding-left: 40px;">(iii) Flatness. The maximum deviation from a 1.5 metre straight edge placed in any position on a nominally plane surface shall not exceed 6 millimetres.</p> <p style="padding-left: 40px;">In addition, for members where accuracy is important, for example those which form bridge deck copes, the allowable dimensional variations and deviations shall not exceed half the values listed above.</p> <p>1.2 Assembly and Erection of Precast Concrete Members other than Prestressed Pretensioned Members</p> <p>1.2.1 The vertical alignment of the member shall not depart from the design level along the line by more than ± five millimetres nor more than three millimetres in a distance of three metres, nor greater than two millimetres in one metre.</p> <p>1.2.2 The horizontal alignment of the new member shall not depart from the design alignment along the line where accuracy is important by more than ± five millimetres nor more than three millimetres in a distance of three metres, nor greater than two millimetres in one metre.</p> <p>1.2.3 At the joints between adjacent members, the difference in level at the point where accuracy is important shall not exceed two millimetres.</p> <p>1.2.4 At the joints between adjacent members, the difference in horizontal alignment at the point where accuracy is important shall not exceed two millimetres.</p> <p>1.2.5 The width of gaps between adjacent members shall be as uniform as possible.</p> <p>1.2.6 The erection procedure shall incorporate means of accurately locating members in their final position. The procedure shall also incorporate means of making fine adjustments to the level and alignment of the units after installation.</p> |

|               |                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| <b>1771AR</b> | <p><b>1 Couplers</b></p> <p>1.1 The use of threaded mechanical couplers is acceptable subject to:</p> <p style="padding-left: 20px;">a) The Company shall submit the source and suppliers to the Overseeing Organisation for agreement;</p> <p style="padding-left: 20px;">b) Manufacturers and suppliers shall hold a relevant valid CARES certificate of approval unless otherwise agreed by the Overseeing</p> |
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|         |                                                                                                                                                                                                                                                                                                                      |
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|         | <p>Organisation;</p> <p>c) All couplers shall be covered by a relevant CARES Technical Approval or other relevant product approval from an appropriate UKAS accredited product certification body; and</p> <p>d) Concrete cover shall be maintained.</p>                                                             |
| 1.2     | Tensile Capacity                                                                                                                                                                                                                                                                                                     |
| 1.2.1   | The tensile strength of the coupled bar should exceed 540 newtons per square millimetre for BS4449:2005 grade B500B or Grade B500C hot rolled reinforcement steel.                                                                                                                                                   |
| 1.3     | Slip (permanent elongation test)                                                                                                                                                                                                                                                                                     |
| 1.3.1   | When a test is made of a representative gauge length assembly comprising reinforcement size, grade and profile to be used and a coupler of the precise type to be used, the permanent elongation after loading to $0.6f_y$ , shall not exceed 0.1 millimetres.                                                       |
| 1.4     | Fatigue                                                                                                                                                                                                                                                                                                              |
| 1.4.1   | The Company shall obtain from the coupler manufacturer the fatigue design S-N curve established as defined below, which he shall furnish to the Designer, Checker and Overseeing Organisation with the Design Documentation. Existing fatigue design S-N data may be taken as an acceptable alternative.             |
| 1.5     | Performance testing                                                                                                                                                                                                                                                                                                  |
| 1.5.1   | The material to be used for the performance tests shall be in all respects similar to those which the Company proposes to use in the New Works.                                                                                                                                                                      |
| 1.5.2   | Mechanical connections shall be qualified for use in the construction on the basis of the following performance tests:                                                                                                                                                                                               |
| 1.6     | Static tensile strength tests                                                                                                                                                                                                                                                                                        |
| 1.6.1   | A minimum number of six static tensile strength tests shall be conducted considering the range of all variables. All test samples shall meet the requirements of sub Clause 1.2 above.                                                                                                                               |
| 1.7     | Slip testing                                                                                                                                                                                                                                                                                                         |
| 1.7.1   | A minimum number of two slip tests shall be conducted considering the range of variables. All test samples shall meet the requirements of sub-Clause 1.3 above.                                                                                                                                                      |
| 1.8     | Fatigue testing                                                                                                                                                                                                                                                                                                      |
| 1.8.1   | <b>Sampling</b>                                                                                                                                                                                                                                                                                                      |
| 1.8.1.1 | Couplers shall be formed into batches of 20 bars of a single type and size, manufactured at the same time. All couplers of the same diameter should preferably be from the same melt. If not, the melt of each test specimen should be known and there should be a representative number of couplers from each melt. |
| 1.8.1.2 | Each test specimen shall be selected at random from the batches and shall be representative of the production run.                                                                                                                                                                                                   |

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|                      | <p>1.8.2 <b>Testing</b></p> <p>1.8.2.1 The fatigue properties for each coupler size shall be established by a competent testing laboratory complying with the requirements Schedule 2 of the New works Requirements.</p> <p>1.8.2.2 Test specimens shall be tested in air under axial tensile loading using tapered grips and a suitable gripping medium.</p> <p>1.8.2.3 Testing shall be carried out under load control and stress shall be calculated using nominal cross-sectional area.</p> <p>1.8.2.4 Tests shall be performed for couplers for reinforcing bar diameters 25 millimetres, 32 millimetres, 40 millimetres on BS4449:2005 grade B500B or grade B500C.</p> <p>1.8.2.5 The number of load cycles per test shall be performed until failure.</p> <p>1.8.2.6 The frequency of testing shall be in the range 5 to 10 hertz.</p> <p>1.8.2.7 The samples of all diameters shall be tested at the following stress ranges (all newtons per square millimetre):</p> <table border="1"> <thead> <tr> <th>Stress Range</th> <th>Max Stress</th> <th>Min Stress</th> <th>Mean Stress</th> </tr> </thead> <tbody> <tr> <td>400</td> <td>450</td> <td>50</td> <td>250</td> </tr> <tr> <td>300</td> <td>400</td> <td>100</td> <td>250</td> </tr> <tr> <td>200</td> <td>350</td> <td>150</td> <td>250</td> </tr> <tr> <td>160</td> <td>360</td> <td>200</td> <td>280</td> </tr> </tbody> </table> <p>1.8.2.8 The S-N curves shall be presented as straight lines, using a log-log scale of stress versus number of cycles to failure. They shall be based upon standard statistical regression analysis methods and give the 97.5 per cent confidence of survival.</p> <p>1.8.3 Frequency of testing</p> <p>1.8.3.1 Three samples shall be tested for each bar / coupler size and stress range; giving a total number of 12 sets of tests per bar / coupler size.</p> | Stress Range | Max Stress  | Min Stress | Mean Stress | 400 | 450 | 50 | 250 | 300 | 400 | 100 | 250 | 200 | 350 | 150 | 250 | 160 | 360 | 200 | 280 |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|------------|-------------|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Stress Range         | Max Stress                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Min Stress   | Mean Stress |            |             |     |     |    |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 400                  | 450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 50           | 250         |            |             |     |     |    |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 300                  | 400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 100          | 250         |            |             |     |     |    |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 200                  | 350                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 150          | 250         |            |             |     |     |    |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 160                  | 360                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 200          | 280         |            |             |     |     |    |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <p><b>1772AR</b></p> | <p><b>1 Concrete Repairs – General Requirements</b></p> <p>1.1 Storage of Materials</p> <p>1.1.1 All proprietary materials shall be stored in a dry weatherproof lock up store free from extremes of cold or heat in accordance with the manufacturer’s written instructions. The materials shall not be removed from the store for use until immediately prior to mixing.</p> <p>1.2 Records</p> <p>1.2.1 As repair work proceeds the Company shall keep records including date stamped photographs. Records shall be held in accordance with the procedures in the Quality Plan and be available for inspection by the Contracting Authority.</p> <p>1.3 High Pressure Water Jetting</p> <p>1.3.1 High pressure water jetting shall use clean and fresh potable water which complies with the requirements of BS EN 1008. The Company</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |             |            |             |     |     |    |     |     |     |     |     |     |     |     |     |     |     |     |     |

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|               |          |                                                                                                                                                                                                                                                                                                                                                                                               |
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|               |          | shall not add antifreeze agents or any other chemicals.                                                                                                                                                                                                                                                                                                                                       |
| <b>1773AR</b> | <b>1</b> | <b>Removal of Concrete in Areas to be Repaired</b>                                                                                                                                                                                                                                                                                                                                            |
|               | 1.1      | Requirements for the Removal of Concrete                                                                                                                                                                                                                                                                                                                                                      |
|               | 1.1.1    | The Company shall cut out and remove concrete from areas specifically identified following inspection and testing.                                                                                                                                                                                                                                                                            |
|               | 1.1.2    | Concrete shall be removed from the area until sound concrete is reached. Where reinforcement becomes exposed concrete shall be removed for a minimum distance of 25 millimetres beyond the rear face of the reinforcement. Where corroded reinforcement is identified the area of concrete removed shall be extended to expose 100 millimetres of uncorroded reinforcement in all directions. |
|               | 1.1.3    | Before cutting out the Company shall determine the position and depth of the reinforcement. The perimeter of the concrete to be removed shall be saw cut perpendicularly to the face of the concrete to a depth of not less than 15 millimetres or to within 10 millimetres of the reinforcement, whichever shall be the lesser.                                                              |
|               | 1.1.4    | At the upper limits of repairs to be made using repair concrete, sloping cuts may be used to avoid the entrapment of air when the concrete is poured.                                                                                                                                                                                                                                         |
|               | 1.1.5    | The saw cut edges shall be abraded by grit blasting or equivalent methods.                                                                                                                                                                                                                                                                                                                    |
|               | 1.1.6    | The concrete shall be removed by the use of suitable hand or mechanical tools or high pressure water jetting. Removal of concrete by water jetting shall be carried out by firms who are registered members of the Association of High Pressure Water Jetting Companies.                                                                                                                      |
|               | 1.1.7    | Where concrete is removed by high pressure water jetting a lightweight electric or pneumatic chipping hammer may be used for final trimming of the area broken out.                                                                                                                                                                                                                           |
|               | 1.1.8    | Overbreak of concrete shall be made good using a concrete repair system selected from Clause 1775AR.                                                                                                                                                                                                                                                                                          |
|               | 1.1.9    | Reinforcement damaged during concrete removal shall be made good. Existing reinforcement which has corroded or is otherwise damaged shall be removed and additional steel reinforcement shall be lapped or welded onto the existing reinforcement. All such welding shall be in accordance with Clause 1717. All loose reinforcement shall be securely tied with stainless steel tying wire.  |
|               | 1.1.10   | The Site shall be kept free of debris or standing water arising from the high pressure water jetting activities.                                                                                                                                                                                                                                                                              |
|               | 1.1.11   | On completion of removal of concrete all concrete surfaces and exposed reinforcement which shall be in contact with repair materials shall be prepared in accordance with Clause 1774AR.                                                                                                                                                                                                      |
| <b>1774AR</b> | <b>1</b> | <b>Surface Preparation</b>                                                                                                                                                                                                                                                                                                                                                                    |
|               | 1.1      | General Requirements                                                                                                                                                                                                                                                                                                                                                                          |

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|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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|                      | <p>1.1.1 Blast cleaning - The Company shall ensure that the grade and particle shape of abrasives is adequate to achieve the appropriate standard of cleanliness. Non-metallic abrasives shall not be recycled</p> <p>1.1.2 Water for cleaning - Only clean cold water which complies with the requirements of BS EN 1008 shall be used for cleaning and rinsing.</p> <p>1.1.3 Preparation of Surfaces of Reinforcement</p> <p style="padding-left: 40px;">a) Standard - Bright steel: Removal of all detrimental contamination and corrosion products to produce a generally bright appearance overall. The surfaces shall be free of embedded abrasive particles and corrosion products when viewed through a X10 illuminated magnifying glass.</p> <p>1.2 Method</p> <p>1.2.1 <b>Blast cleaning using dry air / abrasive system, or</b></p> <p>1.2.2 Wet blast cleaning using a low pressure air / water / abrasive system. The equipment shall not allow the air / water pressure to exceed 14 bar and shall incorporate a metering device to allow the abrasive quantity introduced to be adjusted from 0 to 14 bar.</p> <p>1.2.3 Within an hour of cleaning the treated reinforcement shall be pressure washed with clean water.</p> <p>1.3 Preparation of Surfaces of Concrete</p> <p>1.3.1 Standard - Concrete surfaces shall be clean and dry and free of cement laitance contaminants and loose friable material. The surface shall be wetted one hour before repair concrete is applied. There shall be no standing water. The surface shall be such that repair concrete shall flow freely into all voids and be in intimate contact with the existing concrete.</p> <p>1.4 Method</p> <p>1.4.1 <b>High Pressure Water Jet</b></p> <p>1.4.1.1 The surface profile after cutting out shall be irregular with aggregate particles projecting above the surrounding concrete matrix.</p> <p>1.4.2 <b>Hand or Mechanical Tools</b></p> <p>1.4.2.1 All concrete surfaces to receive repair materials exposed by percussive methods using hand or mechanical tools shall be prepared by grit blasting or high pressure water jetting to remove all fractured or "bruised" concrete surfaces to expose sound aggregate particles.</p> <p>1.5 Procedure Trials</p> <p>1.5.1 The Company shall remove, cut back and prepare the surface of an area of one square metre of concrete to be repaired as a trial of the methods proposed for carrying out the work and obtain a photographic record for inspection by the Contracting Authority.</p> |
| <p><b>1775AR</b></p> | <p><b>1 Concrete Repairs</b></p> <p>1.1 General</p> <p>1.1.1 Concrete repairs shall be carried out using either normal flow concrete,</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

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|         |                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|         | <p>proprietary repair mortar, high-flow repair concrete, proprietary sprayed concrete, or a proprietary repair system proposed by the Company and subject to consent in writing by the Contracting Authority.</p>                                                                                                                                                                                                                  |
| 1.1.1.1 | Crack repairs carried out by a resin injection system shall be proposed by the Company and subject to consent in writing by the Contracting Authority.                                                                                                                                                                                                                                                                             |
| 1.1.2   | Proprietary repair materials and systems shall have an Agrément Board Roads and Bridges Certificate registered with the Department for Transport / Highways Agency.                                                                                                                                                                                                                                                                |
| 1.1.3   | Proprietary repair mortars shall be used for repair areas less than or equal to 1 metre squared or repair depths less than or equal to 30 millimetres deep. Normal flow concrete or high flow concrete or sprayed concrete shall be used for repair areas greater than 1 metre squared or greater than 30 millimetres deep or as otherwise proposed by the Company and subject to consent in writing by the Contracting Authority. |
| 1.2     | Repairs Using Normal Flow Concrete                                                                                                                                                                                                                                                                                                                                                                                                 |
| 1.2.1   | Repair concrete shall be a designed mix for special structural concrete as defined in Clauses 1701 and 1705 of the Specification.                                                                                                                                                                                                                                                                                                  |
| 1.2.2   | Cement content shall be not less than 400 kilograms per cubic metre or more than 550 kilograms per cubic metre.                                                                                                                                                                                                                                                                                                                    |
| 1.2.3   | Maximum aggregate size shall be 10 millimetres.                                                                                                                                                                                                                                                                                                                                                                                    |
| 1.2.4   | The free water / cement ratio shall not be greater than 0.4.                                                                                                                                                                                                                                                                                                                                                                       |
| 1.2.5   | The minimum 28 day compressive strength shall be 40 newtons per square millimetre.                                                                                                                                                                                                                                                                                                                                                 |
| 1.2.6   | Alkali – silica reaction shall be controlled as specified in Clause 1704.5.                                                                                                                                                                                                                                                                                                                                                        |
| 1.3     | Repairs Using Proprietary Repair Mortar                                                                                                                                                                                                                                                                                                                                                                                            |
| 1.3.1   | Prebatched polymer modified cementitious mortars incorporating a shrinkage reduction agent shall be used.                                                                                                                                                                                                                                                                                                                          |
| 1.3.2   | Mortars for hand screeding of surfaces to be waterproofed shall be sand/cement mortar containing styrene acrylate or styrene butadiene polymer bonding mixture.                                                                                                                                                                                                                                                                    |
| 1.3.3   | The free water / cement ratio shall be not greater than 0.4.                                                                                                                                                                                                                                                                                                                                                                       |
| 1.3.4   | The maximum aggregate grain size in the mortar shall be suitable for the depths of repair required.                                                                                                                                                                                                                                                                                                                                |
| 1.3.5   | Water required to mix repair mortars shall comply with the requirements of BS EN 1008.                                                                                                                                                                                                                                                                                                                                             |
| 1.3.6   | The cement content shall be not less than 400 kilograms per cubic metre or more than 550 kilograms per cubic metre.                                                                                                                                                                                                                                                                                                                |
| 1.3.7   | The total chloride ion content of the materials for repairs to prestressed or heat cured concrete shall not exceed 0.1 per cent of the weight of cement. Calcium chloride or admixtures containing chloride salts shall not be used.                                                                                                                                                                                               |
| 1.3.8   | The minimum 28 day strength of the mortar shall be 40 newtons per                                                                                                                                                                                                                                                                                                                                                                  |

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|         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|         | <p>square millimetre. Alkali-silica reaction shall be controlled as specified in Clause 1704.5 of the Specification.</p>                                                                                                                                                                                                                                                                                                                                           |
| 1.4     | <p>Delivery and Storage of Material</p>                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 1.4.1   | <p>The Company shall supply with each batch of the material delivered to the New Works Site certificates furnished by the supplier stating:</p> <ul style="list-style-type: none"> <li>a) the polymer used;</li> <li>b) evidence that the chloride contents are less than specified in sub-Clause 1.3.7 above;</li> <li>c) the content of sodium oxide equivalent in the mortar;</li> <li>d) Maximum shelf life; and</li> <li>e) Handling arrangements.</li> </ul> |
| 1.4.2   | <p>The material shall be stored in a dry environment free from extremes of cold and heat and any specific storage requirements of the manufacturers; and</p>                                                                                                                                                                                                                                                                                                       |
| 1.4.3   | <p>The materials shall not be removed from the store for use until immediately prior to mixing</p>                                                                                                                                                                                                                                                                                                                                                                 |
| 1.5     | <p>Placing Repair Mortar</p>                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1.5.1   | <p>The repair shall be built up in layers in accordance with the repair mortar manufacturer’s written instructions. The surface of each layer except the final layer shall be scored to provide a key for the next layer.</p>                                                                                                                                                                                                                                      |
| 1.5.2   | <p>The repair mortar shall be suitable for the purpose intended i.e. for soffits or vertical surfaces as appropriate.</p>                                                                                                                                                                                                                                                                                                                                          |
| 1.5.3   | <p>Repair mortar shall not be applied when the temperature of the surface to be repaired falls below five degrees Celsius.</p>                                                                                                                                                                                                                                                                                                                                     |
| 1.5.4   | <p>The material shall be incorporated within one hour of mixing or such lesser period as stated in writing by the manufacturer.</p>                                                                                                                                                                                                                                                                                                                                |
| 1.5.5   | <p>Repair mortar shall be cured in accordance with sub-Clause 1710.5 and the manufacturer’s written instructions. During the curing period the temperatures of the repair mortar shall be maintained at or above five degrees Celsius by artificial means if necessary.</p>                                                                                                                                                                                        |
| 1.6     | <p>Surface Finish to Repair Mortar</p>                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1.6.1   | <p>Repair mortar shall be float finished to produce a dense smooth uniform surface free from float marks to the specified line and level.</p>                                                                                                                                                                                                                                                                                                                      |
| 1.7     | <p>Repairs Using High-Flow Repair Concrete</p>                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1.7.1   | <p><b>Materials</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 1.7.1.1 | <p><b>Cement shall comply with Clause 1702.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1.7.1.2 | <p>Cement content shall be not less than 400 kilograms per cubic metre or more than 550 kilograms per cubic metre.</p>                                                                                                                                                                                                                                                                                                                                             |
| 1.7.1.3 | <p>Alkali-silica reaction shall be controlled as specified in Clause 1704.</p>                                                                                                                                                                                                                                                                                                                                                                                     |
| 1.7.1.4 | <p>The total chloride ion content of the materials shall not exceed 0.1% of the weight of cement. Any chloride or admixtures containing chloride</p>                                                                                                                                                                                                                                                                                                               |

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|                                    | <p>salts shall not be used.</p> <p>1.7.1.5 Aggregate shall be well graded with the maximum size not exceeding eight millimetres except when pumping is to be employed when the maximum size shall not exceed 6 millimetres and shall comply with sub-Clause 1702.2.</p> <p>1.7.1.6 Proprietary material shall be of such composition and grading that when mixed with water a flowable concrete is produced which shall flow freely into the confined spaces to be filled and shall not be prone to segregation bleeding or cracking in either the plastic or hardened state.</p> <p>1.7.1.7 Combinations and additions may comprise pulverised fuel ash ground granulated blast furnace slag microsilica plasticisers aggregate suspension agents and shrinkage reduction agents. Calcium chloride or admixtures containing chloride salts shall not be used.</p> <p>1.7.1.8 Microsilica content shall not exceed five per cent of the mass of the cement. Microsilica shall comply with Table 17/70.</p> <p style="text-align: center;"><b>TABLE 17/70 MICROSILICA CONTENT</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Item</th> <th>Limit (by mass)</th> </tr> </thead> <tbody> <tr> <td>Silica content (SiO<sub>2</sub>)</td> <td>minimum 85%</td> </tr> <tr> <td>Alkali content (NaO<sub>2</sub>)</td> <td>maximum 2%</td> </tr> <tr> <td>Carbon</td> <td>maximum 2%</td> </tr> <tr> <td>Proportion passing 50 micron sieve</td> <td>minimum 99%</td> </tr> </tbody> </table> <p>1.7.1.9 Water shall comply with the requirements of BS EN 1008.</p> <p>1.7.1.10 The specified minimum 28 day strength of the concrete shall be not less than 40 newtons per square millimetre. The maximum free water / cement ratio shall not exceed 0.4.</p> <p>1.7.2 <b>Delivery and Storage of Material</b></p> <p>1.7.2.1 Records shall be kept of each batch of material delivered to the site of the New Works in accordance with the procedures in the Quality Plan and shall include:</p> <ul style="list-style-type: none"> <li>a) formulator’s name and address;</li> <li>b) formulator’s agent’s name and address where applicable;</li> <li>c) material identification;</li> <li>d) batch reference number size of batch and number of containers in the delivery;</li> <li>e) date of manufacture;</li> <li>f) evidence that the chloride contents are less than specified in sub-Clause 7(iv) above;</li> <li>g) details of the significant rock components contained in the aggregates;</li> <li>h) cement content;</li> </ul> | Item | Limit (by mass) | Silica content (SiO <sub>2</sub> ) | minimum 85% | Alkali content (NaO <sub>2</sub> ) | maximum 2% | Carbon | maximum 2% | Proportion passing 50 micron sieve | minimum 99% |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------------|------------------------------------|-------------|------------------------------------|------------|--------|------------|------------------------------------|-------------|
| Item                               | Limit (by mass)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |                 |                                    |             |                                    |            |        |            |                                    |             |
| Silica content (SiO <sub>2</sub> ) | minimum 85%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |      |                 |                                    |             |                                    |            |        |            |                                    |             |
| Alkali content (NaO <sub>2</sub> ) | maximum 2%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |                 |                                    |             |                                    |            |        |            |                                    |             |
| Carbon                             | maximum 2%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      |                 |                                    |             |                                    |            |        |            |                                    |             |
| Proportion passing 50 micron sieve | minimum 99%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |      |                 |                                    |             |                                    |            |        |            |                                    |             |



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|         | <ul style="list-style-type: none"> <li>i) combinations and additions used; and</li> <li>j) The equivalent sodium oxide content.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 1.7.2.2 | Containers shall be damp proof and readily emptied of their contents                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 1.7.2.3 | Containers shall be marked with the following information: <ul style="list-style-type: none"> <li>a) material identification;</li> <li>b) batch reference number;</li> <li>c) formulator’s name;</li> <li>d) net weight; and</li> <li>e) Any warnings or precautions concerning the contents.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1.7.2.4 | The material shall be stored in a dry environment free from extremes of cold and heat.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1.7.2.5 | Material shall not be older than three months or a lesser period specified by the formulator when used in the New Works.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1.7.2.6 | The materials shall not be removed from the store for use in the New Works until immediately prior to mixing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1.7.3   | <b>Formwork Site Mixing Placing and Curing</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1.7.3.1 | Formwork shall be Class F3 to sub-Clause 1708.4 with the perimeter of the repair well sealed to prevent grout loss. Release agents shall be compatible with proposed surface treatments.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1.7.3.2 | Mixing in a forced action paddle mixer and placing shall be carried out strictly in accordance with the formulator’s written instructions together with the following additional conditions: <ul style="list-style-type: none"> <li>a) The free water cement ratio shall not exceed 0.4. The water content shall be determined during approval tests and maintained for batch tests works tests and in the New Works within ± 2 per cent of the agreed content.</li> <li>b) No extra water shall be added after the original mixing.</li> <li>c) The material shall be incorporated in the New Works within 20 minutes of completion of mixing or such lesser period as stated by the formulator. The concrete shall be continuously agitated after the mixing and before placing.</li> <li>d) The material shall not be mixed or placed in the New Works at ambient temperatures lower than five degrees Celsius or where the surface temperature of the concrete in the repair void is less than five degrees Celsius.</li> <li>e) The concrete when placed shall have a temperature of not less than five degrees Celsius and not more than 20 degrees Celsius.</li> <li>f) The surface temperature of the concrete shall be maintained at not less than five degrees Celsius until the concrete reaches a strength of 10 newtons per square millimetre as determined by tests on cubes cured under similar conditions to the structural concrete. Heat shall not be applied direct to any concrete.</li> </ul> |

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|  | <p>g) Repair concrete shall not be placed against other concrete which has been in position for more than 30 minutes unless a construction joint is formed in accordance with Clause 1710. In addition the joint surface shall be saturated for a minimum of 2 hours before concrete is placed against it. When repair concrete has been in place for four hours no further concrete shall be placed against it for a further 20 hours.</p> <p>h) Vibration shall not be used. The side shutters shall be tapped lightly with a hammer to expel surface air voids.</p> <p>1.7.3.3 Immediately after placing and for 14 days thereafter concrete shall be protected against harmful effects of weather including rain, rapid temperature changes and frost and from drying out. Impregnation may be carried out in accordance with the manufacturer’s written instructions and not before 14 days as described in Clause 1709. Curing membranes shall not be used.</p> <p>1.7.3.4 When the mix proportions have been determined no variations shall be made in the manufacture supply mix proportions or method of mixing of the material.</p> <p>1.7.4 <b>Approval Tests</b></p> <p>1.7.4.1 Before New Works commence all properties of the proposed high-flow repair concrete shall be demonstrated by the Company and the formulator’s representative by carrying out the tests specified below in an UKAS accredited laboratory. Records shall be maintained of all tests in accordance with the procedures in the Quality Plan.</p> <p>1.7.4.2 The composition of the high flow concrete including the source of water the mix proportions and the method of mixing shall be the same as that proposed for use in the New Works. The composition shall not be varied throughout the course of the tests and the material shall be obtained from the same batch.</p> <p>1.7.4.3 The tests fall into two categories: flowability and compressive strength.</p> <p>1.7.4.4 The flowability tests shall demonstrate:</p> <p>a) flow characteristics in a trough at five degrees Celsius and 20 degrees Celsius as specified in Note 1 below; and</p> <p>b) flow characteristics in a simulated soffit repair at five degrees Celsius and 20 degrees Celsius as specified in Note 2 below.</p> <p>Note 1: The flow characteristics of the concrete in a trough shall be assessed. For each test the concrete and trough shall be at the specified temperature. The funnel of the apparatus shall be fitted with a rubber bung and charged with 6 litres of concrete. On release of the bung the concrete shall flow along the trough and the length of the flow along the trough shall be measured. A test shall consist of three readings the flow requirements shall be deemed to be satisfied if none of the readings is below 750 millimetres in 30 seconds without signs of segregation or bleeding.</p> <p>Note 2: The flow characteristics of the concrete in a simulated soffit repair shall be tested in accordance with BD27. For each</p> |
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|         | <p>test the concrete and apparatus shall be at the specified temperature. The concrete shall be poured in one operation into the supply tube until the level of the concrete has reached 100 millimetres above the underside of the top plate. After the concrete has set the specimen shall be removed from the apparatus and sawn into two parts and the sawn concrete surfaces shall be examined. The concrete shall be homogeneous free from excessive air holes voids segregation and other defects and shall completely fill the simulated repair.</p> |
| 1.7.5   | <b>Compressive Strength Tests</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 1.7.5.1 | Compressive strength tests shall be carried out to determine the compressive strength of the concrete at five degrees Celsius and 20 degrees Celsius. These shall conform to the requirements in BS 8500-2:2006.                                                                                                                                                                                                                                                                                                                                             |
| 1.7.5.2 | Test cubes shall be made in 100 millimetres metal moulds to BS EN 12390-1:2000. The moulds shall be carefully filled by pouring concrete through a funnel to produce void free specimens. There shall be no compaction. The cubes shall be cured and tested in accordance with BS EN 12390-2:2000.                                                                                                                                                                                                                                                           |
| 1.7.5.3 | The minimum compressive strength shall be established using a set of three cubes. The requirement shall be satisfied if none of the compressive strengths obtained is lower than the specified value and the difference between the highest and lowest values is not more than 20% of the average. Identity testing where required shall be carried out in accordance with Clause 1707.                                                                                                                                                                      |
| 1.7.6   | <b>Batch Acceptance Test</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 1.7.6.1 | Each batch of material delivered to the Sites shall be tested as follows: <ul style="list-style-type: none"> <li>a) the material shall be taken at random from one or more containers from the same batch;</li> <li>b) flow through tests shall be carried out as specified in Note 1 of sub-Clause 1.7.4.4 above at 20 degrees Celsius; and</li> <li>c) Compressive strength tests shall be carried out as specified in sub-Clause 1.7.5 above at 20 degrees Celsius.</li> </ul>                                                                            |
| 1.7.7   | <b>Site Tests</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 1.7.7.1 | Site tests shall be carried out to monitor: <ul style="list-style-type: none"> <li>a) flowability; and</li> <li>b) compressive strength.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                          |
| 1.7.7.2 | The flowability of a sample of fresh concrete shall be determined in a trough as specified in sub-Clause 1.7.4.4 Note 1.                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1.7.7.3 | The gain in strength of the repair concrete shall be monitored by testing cubes cured alongside the repaired areas at ambient temperature.                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1.7.7.4 | For each days production of repair concrete six 100 millimetres cubes shall be made in accordance with sub-Clause 1.7.5 above. The cubes shall be cured for 24 hours in the moulds with the top surfaces covered by polythene sheets. After 24 hours the cubes shall be stripped and                                                                                                                                                                                                                                                                         |

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placed in polythene bags which shall be sealed. The cubes shall continue to be stored alongside the repaired areas throughout the curing period until required for testing. The cubes shall be crushed at times determined by the Company but at least two cubes shall be retained to be tested at 28 days.

1.8 Repairs Using Proprietary Sprayed Concrete

1.8.1 **Materials**

1.8.1.1 The proprietary material shall be pre-weighed and pre-mixed at a location off the site of the New Works.

1.8.1.2 Cement shall comply with Clause 1702.

1.8.1.3 Alkali-silica reaction shall be controlled as specified in Clause 1704.

1.8.1.4 The total chloride ion content of the materials shall not exceed 0.1% of the weight of cement. Any chloride or admixtures containing chloride salts as defined by sub-Clause 1702.2 shall not be used.

1.8.1.5 Aggregate shall be well graded with the maximum size not exceeding 3 millimetres and shall comply with sub-Clause 1702.2.

1.8.1.6 Combinations and additions may comprise pulverised fuel ash ground granulated blast furnace slag microsilica and plasticisers. Calcium chloride or admixtures containing chloride salts and expansion agents shall not be used.

1.8.1.7 The maximum sulphate content shall comply with sub-Clause 1704.6.

1.8.1.8 Material shall be capable of being applied to a thickness of 100 millimetres without the requirement for additional mesh reinforcement or fibres. Once placed it shall be capable of being profiled and trowel finished (to the equivalent of formed Class F3) without detrimental effects.

1.8.2 **Performance Characteristics**

1.8.2.1 The proprietary material shall have performance characteristics as detailed in Table 17/71 which are to be verified by an independent testing authority.

**TABLE 17/71: Performance Characteristics**

| Test                                       | Performance                                    |
|--------------------------------------------|------------------------------------------------|
| Adhesion to concrete substrate             | greater than 2.0 newtons per square millimetre |
| Characteristic strength of cores (28 days) | 40 newtons per square millimetre               |
| Tensile splitting strength (28 days)       | greater than 2.4 newtons per square millimetre |
| Static Modulus of elasticity               | 27000 ± 3000 newtons per square millimetre     |
| Shrinkage                                  | less than 0.002 per cent                       |

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| Coefficient of Thermal Expansion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 8 to 12 x 10 <sup>-6</sup> / degrees Celsius               |  |
| Coefficient of Chloride Ion Diffusion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | less than 700 x 10 <sup>-15</sup> square metres per second |  |
| <p>1.8.3 <b>Delivery and Storage of Material</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                            |  |
| <p>1.8.3.1 Records shall be kept of each batch of material delivered to the Site and shall include:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                            |  |
| <ul style="list-style-type: none"> <li>a) formulator’s name and address;</li> <li>b) formulator’s agent’s name and address where applicable;</li> <li>c) batch reference number size of batch and number of containers in the delivery;</li> <li>d) date of manufacture;</li> <li>e) evidence that the chloride contents are less than specified in sub-Clause 1.8.1.4 above;</li> <li>f) details of the significant rock components contained in the aggregates;</li> <li>g) cement content;</li> <li>h) additives used; and</li> <li>i) the sodium oxide equivalent content.</li> </ul> |                                                            |  |
| <p>1.8.3.2 Containers shall be damp proof and readily emptied of their contents.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                            |  |
| <p>1.8.3.3 Containers shall be marked with the following information:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                            |  |
| <ul style="list-style-type: none"> <li>a) material identification;</li> <li>b) batch reference number;</li> <li>c) formulator’s name;</li> <li>d) net weight; and</li> <li>e) any warnings or precautions concerning the contents.</li> </ul>                                                                                                                                                                                                                                                                                                                                             |                                                            |  |
| <p>1.8.3.4 The material shall be stored in a dry environment free from extremes of cold and heat.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                            |  |
| <p>1.8.3.5 Material shall not be older than three months or lesser period specified by the formulator when incorporated in the New Works.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                            |  |
| <p>1.8.3.6 The materials shall not be removed from the store for use in the New Works until immediately prior to mixing.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                            |  |
| <p>1.8.4 <b>Trial Mixes</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                            |  |
| <p>1.8.4.1 Practical tests shall be carried out on the Site by constructing test panels to confirm the suitability of the mix for the New Works. In these tests the type of Constructional Plant used for mixing and placing and the finished face to the panel shall be similar in all respects to those intended for use in the New Works.</p>                                                                                                                                                                                                                                          |                                                            |  |
| <p>1.8.5 <b>Procedure Trials</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                            |  |

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|  | <p>1.8.5.1 Before work commences on the site of the New Works procedure trials shall be carried out to pre-qualify the nozzlemen proposed for use on the New Works. Nozzlemen who have not been pre-qualified shall not be used.</p> <p>1.8.5.2 Each nozzleman shall carry out procedure trial panels. The procedure trial panels shall have minimum dimensions of 750 millimetres x 750 millimetres x 100 millimetres deep and shall be made of plywood with 45 degrees sloped edge to permit rebound to escape.</p> <p>1.8.5.3 One half of each procedure trial panel shall contain reinforcement representative of the size and spacing of the work. The second half of the procedure trial panel shall contain no reinforcement (with the exception of fibre reinforcement) to allow for the extraction of cores for testing in accordance with sub Clause 1.17.2 of this Clause.</p> <p>1.8.5.4 One procedure trial panel shall be New Works Operations using each proposed mixture proportion at each proposed orientation i.e. horizontal overhead and the like.</p> <p>1.8.5.5 A minimum of three 100 millimetre diameter cores shall be extracted from the location of intersecting reinforcing steel to check the adequacy of consolidation of the sprayed concrete around the reinforcement.</p> <p>1.8.5.6 No sprayed concrete shall be carried out on the New Works until the procedure trial testing requirements have been met.</p> <p>1.9 Surface Preparation for Sprayed Concrete</p> <p>1.9.1 Sound surfaces which are to receive sprayed concrete shall be thoroughly cleaned and roughened by grit blasting or high pressure water jetting.</p> <p>1.9.2 Grit blasted areas shall have sprayed concrete applied within 48 hours or shall be reblasted.</p> <p>1.9.3 Immediately prior to spray concreting all the surfaces to be sprayed shall be thoroughly cleaned and wetted with a strong blast of oil-free air and water to comply with the requirements of BS EN 1008.</p> <p>1.10 Outline Definition</p> <p>1.10.1 The outline of the finished sprayed concrete shall be defined by screed boards guide wires or other means proposed by the Company and consented to in writing by the Contracting Authority.</p> <p>1.10.2 Guide wires shall be installed tight and true to line and in such a manner that they may be easily tightened.</p> <p>1.11 Mixing Sprayed Concrete</p> <p>1.11.1 Sprayed concrete shall be mixed in a batch type mixer complying with the requirements of BS1305 except that the water shall be delivered direct to the nozzle. The delivery equipment shall be capable of delivering a continuous even stream of uniformly mixed material to the nozzle. Water supply at the nozzle shall be maintained at a uniform pressure sufficient to ensure adequate hydration at all times. The delivery equipment and nozzle shall be thoroughly cleaned and inspected at the end of each day and parts replaced as required.</p> |
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| 1.11.2 | The temperature of water and cement when added to the mix shall not exceed 60 degrees Celsius and 65 degrees Celsius respectively.                                                                                                                                                                                                                                           |
| 1.11.3 | Water used in sprayed concrete shall comply with the requirements of BS EN 1008.                                                                                                                                                                                                                                                                                             |
| 1.12   | Reinforcement                                                                                                                                                                                                                                                                                                                                                                |
| 1.12.1 | Welded wire mesh fabric reinforcement shall be fixed to prepared surfaces and shall be carefully bent to follow the shape of the members and held in position by anchors spaced at not less than two per square metre. The fabric shall be spaced at not less than 25 millimetres from the finished surface of the concrete.                                                 |
| 1.13   | Transport and Placing Sprayed Concrete                                                                                                                                                                                                                                                                                                                                       |
| 1.13.1 | No concrete shall be sprayed in air temperatures less than five degrees Celsius or onto a surface temperature less than five degrees Celsius. Surfaces shall be free from standing water.                                                                                                                                                                                    |
| 1.13.2 | Sprayed concrete shall emerge from the nozzle in a steady uninterrupted flow and an uninterrupted supply of compressed air shall be provided to maintain adequate nozzle velocity. Should the flow become intermittent the nozzle shall be directed away from the work until the flow again becomes uniform.                                                                 |
| 1.13.3 | Sprayed concrete shall be applied under sufficient pressure so as to give a dense and homogeneous covering to the surface in one or more layers of a thickness compatible with the mix Design constituents' position of reinforcement and plane of application to ensure the placed concrete does not slump or sag.                                                          |
| 1.13.4 | Adequate precautions shall be taken to ensure that sprayed concrete rebound is not incorporated in the finished work and that any previously deposited hardened rebound which may prevent a proper bond or encasement is removed from reinforcement.                                                                                                                         |
| 1.13.5 | Adequate protection shall be given to the nozzle and application surface during high winds.                                                                                                                                                                                                                                                                                  |
| 1.13.6 | The final coat shall be hand screeded to a Class U3 finish in accordance with sub-Clause 1708.4                                                                                                                                                                                                                                                                              |
| 1.14   | Fibre Reinforced Sprayed Concrete                                                                                                                                                                                                                                                                                                                                            |
| 1.14.1 | The weight of steel and / or composite fibres shall not exceed five per cent by weight of the combined weight of cement and aggregate. Fibres shall be added to the mix in such a manner that the fibres are evenly distributed and not bent. Procedure trials shall be undertaken to demonstrate that the proposed methods can achieve the requirements of this sub-Clause. |
| 1.14.2 | Unless otherwise stated elsewhere in this Agreement a final 15 millimetres thick coat of unreinforced sprayed concrete shall be applied over the whole exposed surface to cover exposed fibres.                                                                                                                                                                              |
| 1.14.3 | The gun and nozzle shall be electrically earthed.                                                                                                                                                                                                                                                                                                                            |
| 1.15   | Construction Joints                                                                                                                                                                                                                                                                                                                                                          |
| 1.15.1 | Construction joints in sprayed concrete shall be tapered at                                                                                                                                                                                                                                                                                                                  |

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|          | <p>approximately 30 degrees or cut back square to the reinforcement and then tapered at 30 degrees. The construction joint shall be thoroughly cleaned and all laitance and loose material removed and the surface wetted using a strong blast of air and water prior to the placement of adjacent sprayed concrete.</p>                                                                                                                                                                                                                                                           |
| 1.16     | <b>Curing of Sprayed Concrete</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1.16.1   | Freshly sprayed concrete shall be protected from rain or water until the surface is sufficiently hard to resist damage.                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 1.16.2   | Immediately after placing and for 14 days thereafter sprayed concrete shall be protected against harmful effects of weather including rain rapid temperature changes and frost and from drying out. Curing membranes shall not be used.                                                                                                                                                                                                                                                                                                                                            |
| 1.16.3   | Impregnation in accordance with Clause 1709 may be carried out after 14 days.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1.17     | <b>Production Testing of Sprayed Concrete</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1.17.1   | One production test panel shall be carried out for each nozzle orientation for each day of sprayed concrete production or every five cubic metres of sprayed concrete whichever is the lesser.                                                                                                                                                                                                                                                                                                                                                                                     |
| 1.17.2   | Sprayed concrete production test panels shall be made with dimensions 450 millimetres x 450 millimetres x 100 millimetres thick with 45 degrees sloped edge forms to permit escape of rebound. Production test panels shall contain no reinforcement (other than fibre reinforcement). The production test panels shall be marked cured cored and tested in compression in accordance with the appropriate parts of BS EN 12350 and BS EN 12390. They shall be tested in a UKAS accredited laboratory. Records shall be maintained of all tests and stored at a suitable location. |
| 1.17.3   | Routine tests shall be carried out by the Company on the finished sprayed concrete. These shall consist of taking 25 millimetres or 100 millimetres dia. cores from the finished sprayed concrete and testing them in the same manner as cores taken from the test panels or by carrying out non-destructive tests by means of a 'Schmidt' hammer or 'Windsor Probe' to determine compressive strength and testing for bond by the use of a hand hammer.                                                                                                                           |
| 1.18     | <b>Resin Injection Repairs</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1.18.1   | <b>Preparation of Surfaces Around Cracks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1.18.1.1 | The concrete surface at least 50 millimetres either side of the crack shall be dry blast cleaned to a sound surface free from dirt moss salt staining and loose concrete. The full extent of the crack shall be found and the cleaned area shall extend 50 millimetres beyond the end of the crack or until the crack becomes too narrow to warrant resin injection.                                                                                                                                                                                                               |
| 1.18.1.2 | Where algae or other bacterial growth emanates from the crack it shall be removed by scrubbing with bactericide and rinsing with clean water. Health and safety precautions appropriate to the bactericide cleaning agent used shall be adopted including those recommended in writing by the manufacturers. Measures shall be taken to ensure that any adjacent water course is not contaminated and that run-off is collected and                                                                                                                                                |



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|  | <p>disposed of in a safe manner.</p> <p><b>1.18.2 Moisture in Cracks</b></p> <p>1.18.2.1 Where the moisture level in the crack to be resin injected is unacceptably high the crack shall be blown through with dry hot air starting at the top of the crack. A temporary crack sealant shall be applied immediately after blowing through and the resin shall be injected into the crack immediately the necessary preparations are complete.</p> <p>1.18.2.2 If for whatever reason the crack becomes damp before it is resin injected no further work shall be permitted until the temporary crack sealant is removed and the crack blown through again with dry hot air</p> <p>1.18.2.3 The temperature of the hot air shall be sufficient to dry the full depth of the crack and shall not exceed the maximum temperature specified by the equipment manufacturer.</p> <p><b>1.18.3 Resin Injection</b></p> <p>1.18.3.1 The resin to be used shall be either polyester or epoxy based and shall be mixed and injected in accordance with the manufacturer's written specification. Resin shall not be injected when the air temperature or the surface temperature concrete to be repaired is less than five degrees Celsius.</p> <p>1.18.3.2 The spacing of the nozzle positions shall be equal to the depth of the crack and shall not in any case be less than 250 millimetres.</p> <p>1.18.3.3 Injecting shall start at the bottom of the crack and work shall proceed upwards in a continuous operation throughout. Resin shall be seen extruding from the crack at the next nozzle position before the current nozzle location is locked off.</p> <p>1.18.3.4 The injected crack shall be left undisturbed for a period of at least 24 hours to allow the resin to harden.</p> <p>1.18.3.5 When the resins are sufficiently cured the cracks and any resin spillages shall be cleaned from the face of the concrete.</p> <p><b>1.18.4 Proving Tests</b></p> <p>1.18.4.1 When the resin has set, two 20 millimetres diameter proving cores shall be taken to the full depth of the crack. These shall be filled with either the resin used for injecting or with a suitable filler of a compatible thixotropic resin.</p> <p><b>1.19 Sealing of Cracks in Concrete Bridge Decks</b></p> <p>1.19.1 The preparation of surfaces around cracks and the measures to deal with algae or other growth in cracks shall be as described in sub-Clause 1.18 above.</p> <p><b>1.19.2 Application of Sealer</b></p> <p>1.19.2.1 The sealing resin shall be a low viscosity polyester epoxy or acrylic polymer which shall be compatible with any proposed waterproofing system.</p> <p>1.19.2.2 The material shall be applied by pouring through a fine nozzle directly into the crack or into pre-formed dams.</p> |
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|               | <p>1.19.2.3 The injected crack shall be left undisturbed for a period of at least 24 hours to allow the resin to harden.</p> <p>1.19.2.4 When the resins are sufficiently cured the cracks and resin spillages shall be cleaned to the face of the concrete.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>1776AR</b> | <p><b>1 Foamed Concrete Fill to Structures and Backfilling to Drainage Trenches</b></p> <p>1.1 Foamed concrete fill to arches or bridge decks shall be of density 1400 – 1600 kilograms per cubic metre. Minimum cement content shall be 350 kilograms per cubic metre. The maximum free water cement ratio shall be 0.4. The minimum compressive strength shall be eight newtons per square millimetre.</p> <p>1.2 Foamed concrete fill to drainage trenches shall comply with sub-Clause 1 above.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>1777AR</b> | <p><b>1 Installation of Resin Anchored Reinforcement</b></p> <p>1.1 General</p> <p>1.1.1 Installation of resin anchored reinforcement into existing reinforced concrete shall utilise proprietary products, materials and methods suitable for highway works and for the conditions set out below.</p> <p>1.1.2 The Company shall consult and comply with the requirements of Transport Scotland with regard to all resin anchor systems. The Company shall provide the Contracting Authority with completed Consultation Certificates in accordance with Part 5 of the New Works Requirements in respect of this requirement.</p> <p>1.1.3 The resin anchor system proposed shall be checked against the anchorage design to ensure that it is capable of resisting the design loads by means of testing. For the purposes of testing the test loading shall be the load calculated allowing for a 30 per cent increase above ULS design load and adjusted to allow group effects to be ignored.</p> <p>1.1.4 Site testing to verify the above loads is required and is specified in sub-Clause 1.2 below.</p> <p>1.1.5 <b>Materials</b></p> <p>1.1.5.1 Resin adhesive grout for anchoring reinforcement shall be polyester or epoxy based and non-expansive. Grout shall be stable over the temperature range of –20 degrees Celsius to +40 degrees Celsius and be resistant to mechanical and chemical degradation under normal service conditions.</p> <p>1.1.6 <b>Workmanship</b></p> <p>1.1.6.1 Installation shall strictly follow the methods and working procedures specified by the proprietary product manufacturer. Adequate preparations shall be made to work involving resin grouting to avoid inconsistent results.</p> <p>1.1.6.2 Locations for the drilling of holes shall be determined by the design of the New Works. The design of the New Works shall ensure that</p> |

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|  | <p>locations can be adjusted within tolerances specified in the design of the New Works to avoid existing reinforcement. It shall be ensured that holes do not clash with existing buried reinforcement by using non-destructive test methods (e.g. cover meter) prior to commencement of drilling.</p> <p>1.1.6.3 Before and after drilling holes it shall be ensured that the existing concrete is sound, and that any significant defects such as loose fractures and voids are repaired. Any defective holes shall be repaired and not used. Alternative holes shall be re-drilled in new locations without affecting the design of the New Works.</p> <p>1.1.6.4 Holes shall be formed using rotary percussion drilling. The diameter and minimum depth shall be as required by the design of the New Works.</p> <p>1.1.6.5 After drilling, holes shall be free of all contaminants including dust and water before injecting grout. It shall be ensured that grout fills the hole entirely without air voids following insertion of the reinforcement, and that the reinforcement is fully coated by the grout. Excess grout shall be removed immediately.</p> <p>1.1.6.6 Reinforcement shall not be inserted or grout used after the gel time, and the completed installation shall not be disturbed until the grout is fully cured. Gel times and curing times as stated by the product manufacturer will depend on concrete temperature, therefore temperature shall be recorded during installation.</p> <p>1.2 Testing of Resin Anchored Reinforcement</p> <p>1.2.1 The adequacy of resin fixed reinforcement shall be verified by site testing. For each combination of bar size and embedment depth, 1 No. test shall be carried out for every 20 bars, subject to a minimum of 3 No. tests.</p> <p>1.2.2 A test rig equivalent to that shown in BS 5080 Part 1: 1993, Figure 3 shall be used. The test rig shall be capable of testing the anchor bars in situ.</p> <p>1.2.3 If, due to the shape code or spacings of the bars to be resin grouted into the deck, it is not possible to apply the test rig to a bar, the following procedure should be followed: A straight bar of the same type, diameter and embedment depth shall be tested as close to the scheduled test bar as is practical.</p> <p>1.2.4 The bars shall be capable of resisting the test loads given in sub-Clause 1.1.3 above.</p> <p>1.2.5 A force sufficient to take up any slack in the apparatus, attachment and seating should be initially applied in accordance with BS 5080 Part 1: 1993. Readings taken at this stage will constitute the base from which subsequent relative movement shall be measured.</p> <p>1.2.6 Each tested anchor shall be loaded incrementally in tension in accordance with BS 5080 Part 1: 1993 up to the test load.</p> <p>1.2.7 Incremental loads shall be held for not less than half a minute and the test load for not less than five minutes.</p> |
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|                      | <p>1.2.8 Readings shall be taken immediately after applying load and at the ends of the time intervals stated above.</p> <p>1.2.9 There should be no movement of the anchorage during the test and total movement should be no greater than the load / extension characteristics of the reinforcement bar being tested and the testing apparatus being used.</p> <p>1.2.10 Any evidence of slip during loading up to the test load, as demonstrated by a significant change in the slope of the load / extension curve, shall constitute a failure.</p> <p>1.2.11 Testing records shall be retained at the end of each testing day.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <p><b>1778AR</b></p> | <p><b>1 Early Thermal cracking</b></p> <p>1.1 The Company shall develop suitable concrete mix designs and safe curing methods to ensure that any cracking due to early thermal effects does not exceed appropriate permissible crack widths in BS EN 1992-2 and to ensure compliance with the following criteria.</p> <p>a) Peak temperature: 65 degrees Celsius</p> <p>b) Maximum temperature differential within a single pour: in accordance with Table 7.1 of CIRIA C660 for internal restraint, <math>R = 0.42</math>, for the appropriate coarse aggregate type. If limestone coarse aggregate is to be used, the assumed value for coefficient of linear thermal expansion shall be demonstrated by measurements on concrete specimens.</p> <p>(i) The demonstration shall include the results of early thermal cracking trial pours, as scheduled in Appendix 1/5 of the specification. The temperature rise recorded in the trial pours may be used to establish the temperature rise for the concrete and to enable more reliable predictions of temperature rise using CIRIA C660.</p> <p>(ii) The relationship established from the trial pours between temperature and strain change may be used to determine the coefficient of thermal expansion and contraction as the temperature in the block rises and falls. This performance data can then be used to demonstrate compliance with the Agreement requirements to restrict early thermal cracking.</p> <p><b>2 Early Thermal Cracking Trial Pours</b></p> <p>2.1 Early thermal cracking trial pours shall be performed in advance of construction for each proposed concrete mix subject to these considerations. Further testing shall be performed in advance of any changes to materials or mix composition that might have a significant effect on these properties including, but not limited to, changes in type, source or content of cement, ground granulated blastfurnace cement or fly ash.</p> <p>2.2 Insulated 'hot-blocks' (one cubic metre) shall be used to simulate the</p> |

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|                       | <p>temperature conditions in large sections. The base, sides and top should be contained in 18 millimetre plywood with 50 millimetres of polystyrene insulation. The temperature in the block should be measured using thermocouples (at the centre and at the surface). 100 millimetres cores shall be taken at 28 days for testing compressive strength and checking for internal cracks.</p> <p>2.3 The test blocks should be instrumented using thermocouples and Vibrating Wire strain gauges (VWG) to provide a measure of the temperature rise and the associated strain.</p> <p>2.4 The following test data shall be recorded on the test certificate:</p> <ul style="list-style-type: none"> <li>a) Name and address of the test laboratory;</li> <li>b) Date and identification number of the test report;</li> <li>c) Name and address of the organisation responsible for the testing;</li> <li>d) Name and address of the concrete supplier;</li> <li>e) Date of arrival of the concrete;</li> <li>f) Composition of the concrete tested, including sources of materials;</li> <li>g) Purpose of the test;</li> <li>h) Test method;</li> <li>i) Any deviation from the test method;</li> <li>j) Name of the person who performed the test;</li> <li>k) Date of the test;</li> <li>l) Test results, including:             <ul style="list-style-type: none"> <li>(i) Compressive strength of cores taken and tested in accordance with BS EN 12504-1 and BS EN 13791 at an age of 28 days;</li> <li>(ii) The temperature rise; and</li> </ul> </li> <li>m) Date and signature.</li> </ul> |
| <p><b>1870 AR</b></p> | <p><b>1870 General</b></p> <p><b>1870.1 Basis of execution</b></p> <p>1 The basis for the execution of structural steelwork in this Series shall be BS EN 1090-2:2008+A1:2011, with options and additional requirements specified in this Series (see 1870.3).</p> <p><b>1870.2 Clause numbering</b></p> <p>1 The clause and sub-clause numbering and headings in Clauses 1871 to 1882 in this Series adopt those in BS EN 1090-2:2008+A1:2011, Clauses 1 to 12 respectively.</p> <p>2 The numbering of paragraphs in this Series bears no specific relationship to the order of paragraphs presented in BS EN 1090-</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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|  | <p>2:2008+A1:2011.</p> <p>3 Reference to a specific paragraph in this Series is by sub-clause number followed by the paragraph number in brackets where appropriate.</p> <p><b>1870.3 Options and additional requirements</b></p> <p>1 Where the requirements specified in BS EN 1090-2:2008+A1:2011 are to apply to this Series without amendment, the heading of the related sub-clause in this Series is followed by the abbreviation (AS) (as specified).</p> <p>2 Where there is a choice between two or more different requirements in a sub clause in BS EN 1090-2:2008+A1:2011 the selected requirement(s) shall be as specified in this Series. All other requirements in that sub-clause in BS EN 1090-2:2008+A1:2011 shall apply to this Series unless otherwise specified in this Series.</p> <p>3 Where additional requirements are specified in this Series, the requirements in the related sub-clause in BS EN 1090-2:2008+A1:2011 shall also apply to this Series unless otherwise specified in this Series.</p> <p>4 Where there may be additional project specific requirements in Appendix 18/1, the heading of the sub-clause in this Series is followed by the abbreviation (18/1).</p> <p>5 Where a requirement in BS EN 1090-2:2008+A1:2011 is qualified in that standard by the words ‘unless otherwise specified’, the requirement shall not be amended unless it is specified otherwise in this Series or in Appendix 18/1.</p> <p><b>1870.4 Qualification of Constructors</b></p> <p>1 In order to satisfy the general assumptions stated in BS EN 1990:2002+A1:2005, 1.3(2) relating to the execution of structures designed to the Eurocodes, all structural steelwork executed in accordance with this Series shall be undertaken by a constructor listed in the Register of Qualified Steelwork Contractors Scheme for Bridgeworks, which demonstrates that they have the necessary technical capability and competence for the type and value of work to be undertaken. These requirements may also be satisfied by registration and audit through an equivalent recognised registration scheme. Details of the current Register of Qualified Steelwork Contractors for Bridgeworks (RQSC) can be found at <a href="http://www.steelconstruction.org">www.steelconstruction.org</a> .</p> <p>2 The constructor shall undertake a review to confirm that their approved scope of work in respect of all execution processes is sufficient for the execution of the works described on the drawings referred to in Appendix 18/1. The review shall be documented and shall be submitted for the approval of the Design Organisation in advance of execution. The review shall include supporting evidence that shall include but not be limited to:</p> <ul style="list-style-type: none"> <li>• details of registrations in accordance with 1870.4 (1) and</li> </ul> |
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|  | <p>1870.5.1 (1)</p> <ul style="list-style-type: none"> <li>• type and size of construction works;</li> <li>• product forms and thicknesses;</li> <li>• material grades;</li> <li>• execution processes;</li> <li>• relevant part of BS EN ISO 3834:2005; and</li> <li>• quantified service categories.</li> </ul> <p><b>1870.5 Quality management schemes</b></p> <p><b>1870.5.1 Execution of steelwork</b></p> <p>1 In order to satisfy the requirements stated in BS EN 1990:2002+A1:2005, 2.5 relating to quality management measures in the execution of structures designed to the Eurocodes, all structural steelwork executed in accordance with this Series shall be undertaken by a constructor registered to National Highway Sector Scheme 20 'The Execution of Steelwork in Transportation Infrastructure Assets', as described in Appendix A.</p> <p><b>1870.5.2 Supply of mechanical fasteners</b></p> <p>1 The requirements described in 1882.2.1 (2) for the verification of mechanical fasteners may be satisfied through mechanical fasteners being supplied by an Organisation registered to National Highway Sector Scheme 3 'Stocking and Distribution Activities for Mechanical Fasteners', as described in Appendix A.</p> <p><b>1870.6 CE Marking</b></p> <p><b>1870.6.1 General</b></p> <p>1 Conformity assessment of structural steel components shall be undertaken in accordance with BS EN 1090-1:2009+A1:2011. A declaration of performance under a CE mark in accordance with the Construction Products Regulations shall be provided for all structural steel components. The declaration of performance shall include a declaration of Structural Characteristics in accordance 1870.6.2 (1).</p> <p><b>1870.6.2 Declaration of structural characteristics</b></p> <p>1 In the property declaration for 'Structural Characteristics' of a structural steel component, the entry for 'Manufacturing' shall read as follows:</p> <p>2 'According to component specification "X", which specifies the relevant EN 1090-2 requirements and execution class(s).</p> <p>where:</p> <p>"X" is the component specification reference defined in 1870.6.3(1).</p> <p><b>1870.6.3 Component specification reference (18/1)</b></p> |
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|                | <p>1 The component specification reference to be adopted for the conformity assessment of a structural steel component shall be as identified in Appendix 18/1.</p> <p><b>1870.6.4 Component specification</b></p> <p>1 The component specification for a structural steel component shall comprise the following:</p> <ul style="list-style-type: none"> <li>• this Series,</li> <li>• Appendix 18/1,</li> <li>• the drawings listed in Appendix 18/2 relevant to the component, and</li> <li>• any other documents relevant to the manufacture of the component that may be referred to on the drawings listed in Appendix 18/2.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>1871 AR</b> | <p><b>1871.1 Scope</b></p> <p>1 This Series shall apply to the execution of all permanent and temporary works steelwork.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>1872 AR</b> | <p><b>1872 Normative References</b></p> <p><b>1872.1 General</b></p> <p>1 Normative references already given in BS EN 1090-2:2008+A1:2011 are not repeated in this Clause.</p> <p>The following references are not covered by documents given in 1872.1 (1):</p> <ul style="list-style-type: none"> <li>• BS EN 1990:2002+A1:2005 Eurocode – Basis of structural design. Published by BSI.</li> <li>• National Highways Sector Schemes for Quality Management in Highways Works: <ul style="list-style-type: none"> <li>– 3 Stocking and Distribution Activities for Mechanical Fasteners (NHSS 3)</li> <li>– 19A Corrosion Protection of Ferrous Materials by Industrial Coatings. (NHSS 19A)</li> <li>– 20 The Execution of Steelwork in Transportation Infrastructure Assets (NHSS 20)</li> </ul> <p>Published by the United Kingdom Accreditation Service (UKAS).</p> </li> <li>• Regulation (EU) No 305/2011 of the European Parliament and of the Council (The Construction Products Regulation).</li> </ul> <p><b>1872.2.4 Mechanical fasteners</b></p> <p>1 BS EN ISO 3269:2001 Fasteners – Acceptance inspection. Published by BSI.</p> <p><b>1872.2.6 Structural bearings</b></p> <p>1 PD 6703:2009 - Structural bearings - Guidance on the use of structural</p> |



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|                      | <p>bearings. Published by BSI.</p> <p><b>1872.4 Welding</b></p> <p>1 BS EN ISO 6520-1:2007 – Welding and allied processes. Classification of geometric imperfections in metallic materials. Part 1: Fusion welding. Published by BSI.</p> <p><b>1872.5 Testing</b></p> <p>1 BS EN 1779:1999 – Non-destructive testing. Leak testing. Criteria for method and technique selection. Published by BSI.</p> <p>2 BS EN 1593:1999 – Non-destructive testing. Leak testing. Bubble emission techniques. Published by BSI.</p> <p>3 BS EN ISO 17640:2010 – Non-destructive testing of welds. Ultrasonic testing. Techniques, testing levels, and assessment. Published by BSI.</p> <p>4 BS EN ISO 23277:2009 – Non-destructive testing of welds. Penetrant testing of welds. Acceptance levels. Published by BSI.</p> <p>5 BS EN ISO 23278:2009 – Non-destructive testing of welds. Magnetic particle testing of welds. Acceptance levels. Published by BSI.</p> |
| <p><b>1873AR</b></p> | <p><b>1873.1 Terms and Definitions</b></p> <p>1 Quantified service category: Category that characterises a component or structure (or part thereof) in terms of the circumstances of its use within specified limits of static and cyclic stressing. Quantified service category is designated by one of the symbols F36, F56, F71, F90, F112 or F140.</p> <p>2 Design Organisation: Organisation with ultimate responsibility for the design of the structural steelwork, irrespective of whether or not detail design has been undertaken by others.</p> <p>3 Factory production control: (Abbreviated to FPC in this Series) The documented, permanent and internal control of production in a factory, in accordance with BS EN 1090-1:2009+A1:2011, 6.3.</p> <p>4 Inspection lot (for mechanical fasteners): As defined in BS EN ISO 3269:2001</p>                                                                                                   |
| <p><b>1874AR</b></p> | <p><b>1874 Specifications and Documentation</b></p> <p><b>1874.1 Execution specification</b></p> <p><b>1874.1.1 General (18/1)</b></p> <p>1 The specification for structural steelwork shall include the requirements of this Series and those of Appendix 18/1, the drawings listed in Appendix 18/2 and any other relevant documents that may be referred to on the drawings.</p> <p>2 Certain requirements in this Series are differentiated on the basis of quantified service category (see 1873 (1)). These are given in the following clauses:</p>                                                                                                                                                                                                                                                                                                                                                                                                 |

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|                      | <p>1875.3.3 Surface conditions of steel products</p> <p>1875.3.4 Special properties of steel products</p> <p>1876.2 Identification marks</p> <p>1876.4.4 Free edge hardness</p> <p>1876.6.3 Execution of holing</p> <p>1876.7 Cut outs</p> <p>1877.5.6 Temporary attachments</p> <p>1877.5.9.2 Single side weld permanent backing</p> <p>1877.5.17 Execution of welding</p> <p>1882.4.2.2 Scope of specific weld inspection</p> <p>1882.4.2.3 Final visual acceptance criteria for welds</p> <p>1882.4.2.4 Final MT, PT, UT and RT acceptance criteria for welds</p> <p>1882.4.4 Production tests on welding</p> <p>3 Where requirements are differentiated on the basis of quantified service category, the quantified service category for a component or structure (or part thereof) is identified on the drawings referred to in Appendix 18/1.</p> <p><b>1874.1.2 Execution classes</b></p> <p>1 Certain technical requirement in BS EN 1090-2:2008+A1:2011 are differentiated on the basis of execution class. Where this Series, including Appendix 18/1, specifies a requirement which is common to more than one execution class all relevant execution classes are indicated. For example, if the specified requirement is the same for EXC2, EXC3 and EXC4 this is designated EXC2/3/4.</p> <p><b>1874.2.1 Quality documentation</b></p> <p>1 Quality documentation shall conform to the requirements for EXC2/3/4.</p> <p><b>1874.2.2 Quality plan</b></p> <p>1 A quality plan for the execution of the works is required and shall include the items recommended in BS EN 1090-2:2008+A1:2011, Annex C and Appendix A of NHSS 20 where applicable, and 1879.4.1(1). Where corrosion protection works is included, the quality plan shall include the items in Appendix A of National Highways Sector Scheme 19A.</p> <p>2 The execution records shall include the constructor's drawings (including electronic files) for the execution of all components.</p> <p>3 The constructor's drawings (including electronic files) shall include the quantified service category and unique component mark information.</p> |
| <p><b>1875AR</b></p> | <p><b>1875 Constituent Products</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

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|  | <p><b>1875.2 Identification, inspection documents and traceability</b></p> <p>1 Inspection documents for steel grades S355 JR and JO shall conform to the requirements for EXC2/3/4 in BS EN 1090-2:2008+A1:2011, Table 1, note a.</p> <p>2 Stages of traceability shall conform to the requirements for EXC3/4.</p> <p>3 Specialist proprietary and/or bespoke products incorporating non-standardised features, components or methods of manufacture, e.g. castings, forgings, cables and their terminations, energy absorbing devices, mechanical components such as movement joints and major bearings shall be uniquely traceable.</p> <p>4 The identification of different grades and/or qualities of constituent products shall conform to the requirements for EXC2/3/4.</p> <p>1875.3 Structural steel products</p> <p><b>1875.3.1 General (18/1)</b></p> <p>1 Option 3 in BS EN 10025-1:2004, 7.3.2.2 allowing Charpy quality to be verified at a temperature above the lowest test temperature shall not be adopted.</p> <p><b>1875.3.2 Thickness tolerances</b></p> <p>1 Thickness tolerance Class A shall be used.</p> <p><b>1875.3.3 Surface conditions (18/1)</b></p> <p>1 For plates and flats, EXC3/4 shall apply and more stringent surface conditions shall be required as follows. Class A3 and class B3 to BS EN 10163-2 shall apply in all circumstances, except that class A2 and class B2 may be adopted where:</p> <ul style="list-style-type: none"> <li>• steels are not specified to BS EN 10025-6;</li> <li>• the quantified service category is F90 or less;</li> <li>• reports on weld repairs are submitted;</li> <li>• UT and MPI are used for inspection of weld repairs; and</li> <li>• weld repairs are rechecked on delivery for quantified service categories F71 and above.</li> </ul> <p>2 For sections, the special restrictions on surface imperfections and repair shall conform to BS EN 10163-3 as follows:</p> <ul style="list-style-type: none"> <li>• cracks, shells and seams in sections shall be repaired in all circumstances;</li> <li>• class C3 and class D3 require no special restrictions;</li> <li>• class C2 and class D2 shall have the same restrictions in use as for plates to class A2 and class B2, in 1875.3.3(1);</li> <li>• class C1 and class D1 shall be restricted to quantified service category F36.</li> </ul> <p>3 Steel with pitted surfaces, i.e. rust grades C and D according to BS EN ISO 8501-1:2007 shall not be used.</p> <p><b>1875.3.4 Special properties (18/1)</b></p> |
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| 1 | <p>The following requirements shall apply to cross plates in welded cruciform and welded tee joints transmitting primary stresses through the plate thickness on a band width four times the thickness of the plate each side of the proposed attachment.</p> <ul style="list-style-type: none"> <li>• for quantified service category F56, the internal discontinuity quality class shall conform to the requirements for EXC3/4;</li> <li>• for quantified service category F71 and above, BS EN 10160 internal discontinuity class S<sub>2</sub> shall be used;</li> </ul> |
| 2 | <p>Flange or web plates close to bearing diaphragms and /or single sided bearing stiffeners, where attached by welding, shall be checked for conformance to BS EN 10160 internal discontinuity quality class S<sub>1</sub> in the areas defined in BS EN 1090-2:2008+A1:2011, 5.3.4.</p>                                                                                                                                                                                                                                                                                      |
| 3 | <p>The precautions necessary to avoid lamellar tearing in steel, cruciform and corner joints shall be decided by the constructor, whether or not improved deformation properties have been specified for the through plates.</p>                                                                                                                                                                                                                                                                                                                                              |
|   | <p><b>1875.5 Welding consumables</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1 | <p>As an alternative to the consumables in BS EN 1090-2:2008+A1:2011, Table 6, C-Mn consumables may be used for welding steels supplied to EN 10025-5, but only for:</p>                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1 | <p>single run fillet welds not exceeding 8mm leg length using processes 135 and 121;</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2 | <p>butt welds using one run only per side;</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 3 | <p>the body of multi-pass butt welds except for the outer 3mm thick surface zones of the cap, root and ends (excluding any overfill). The surface zones shall be deposited using consumable conforming to options 1, 2 or 3 of BS EN 1090-2:2008+A1:2011, Table 6 permitted by 1875.5(1). (See also BS EN 1090-2:2008+A1:2011, 7.5.10).</p>                                                                                                                                                                                                                                   |
|   | <p><b>1875.6 Mechanical fasteners</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|   | <p><b>1875.6 2 Terminology</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 1 | <p>The ‘part-turn’ method of tightening of preloaded fasteners is similar to the ‘combined method’ in BS EN 1090-2:2008+A1:2011. However it is restricted to Grade 8.8 assemblies, but class K<sub>o</sub> assemblies may also be used. It has reduced torque values in the first step and higher nut rotations in the second step (see 1878.5.1(5)).</p>                                                                                                                                                                                                                     |
|   | <p><b>1875.6.4 Structural bolting assemblies for preloading (18/1)</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1 | <p>The following products shall be used for preloaded bolt assemblies using all tightening methods, except the HRC method:</p> <ul style="list-style-type: none"> <li>• bolt assemblies conforming to BS EN 14399-3 (HR type);</li> <li>• nuts lubricated by the manufacturer after the nuts have been tapped (and, if relevant, after any coating passivation process has been completed).</li> </ul>                                                                                                                                                                        |
| 2 | <p>Electroplated property class 10.9 bolt assemblies shall not be used.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 3 | <p>Cleaning of property class 10.9 bolts prior to hot dip galvanising shall</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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|                      | <p>be by blast cleaning and not by pickling.</p> <p>4 Nuts of property class 10 shall be used with bolts of property class 8.8.</p> <p>5 Bolts of property class 10.9 shall not be used for assemblies tightened by the part turn method (see 1878.5.1 (4) and (5)).</p> <p><b>1875.6.6 Weather resistant assemblies</b></p> <p>1 The chemical composition of weather resistant assemblies shall comply with the requirements for Type 3 fasteners to ASTM standard A325, Grade A, or equivalent.</p> <p><b>1875.6.7 Foundation bolts (18/1)</b></p> <p>1 Reinforcing steels shall not be used for foundation bolts carrying applied tension forces.</p> <p><b>1875.6.9 Washers (AS)</b></p> <p>1 Plain washers (AS)</p> <p>2 Taper washers (AS)</p> <p><b>1875.6.13 Delivery and identification</b></p> <p>1 See 1870.5.2 (1)</p> <p>1875.7 Studs and shear connectors</p> <p>1 Headed stud connectors shall be Type SD1 in accordance with BS EN ISO 13918:2008.</p> <p>1875.8 Grouting materials (18/1)</p> <p>1 Bedding mortars shall conform to the requirements of Series 2600, Clause 2601.</p> <p>1875.9 Expansion joints for bridges (18/1)</p> <p>1 Expansion joints and sealing of gaps shall conform to the requirements of Series 2300.</p> <p>1875.11 Structural bearings (18/1)</p> <p>1 The guidance given in PD 6703:2009 on the execution of bearings shall be followed, where relevant.</p> |
| <p><b>1876NR</b></p> | <p><b>1876 Preparation and Assembly</b></p> <p><b>1876.2 Identification (18/1)</b></p> <p>1 Identification of components shall conform to the requirements for EXC3/4.</p> <p>2 Hard stamps, punched or drilled marks shall not be used for zones with a quantified service category of F71 and above.</p> <p>3 Soft or low stress stamps may be used for zones with a quantified service category of F90 and below.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

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|  | <p>2.4 No type of stamp shall be used for zones with a quantified service category of F112 and above.</p> <p><b>1876.4 Cutting</b></p> <p><b>1876.4.3 Thermal cutting</b></p> <p>1 The quality of cut surfaces shall conform to the requirements for EXC2/3.</p> <p><b>1876.4.4 Hardness of free edge surfaces (18/1)</b></p> <p>1 Free edge surfaces with hardnesses exceeding 380HV10 values shall be ground, finished or machined until sufficient material has been removed such that the 380HV10 limit is not exceeded, subject to the exceptions in 1876.4.4(2).</p> <p>2 Unless prohibited in Appendix 18/1, the hardness limit described in 1876.4.4(1) need not apply to machine plasma cut edges where:</p> <ul style="list-style-type: none"> <li>a) the steel grade does not exceed S420;</li> <li>b) plain edge surfaces are not subject to a quantified service category exceeding F71 [subject to c)];</li> <li>c) edge surfaces within 25mm of stress raising features such as re-entrant corners, openings, weld terminations on the edge that are not subject to a quantified service category exceeding F36;</li> <li>d) edge surfaces are not subject to subsequent cold forming (unless fully fused over the full length and width by subsequent welding); and</li> <li>e) procedure tests have been carried out to verify that the proposed method of surface preparation of the plasma cut edge can readily achieve the cleanliness and profile specified in Series 1900, where corrosion protection of the edges is required.</li> </ul> <p><b>1876.5 Shaping (AS)</b></p> <p><b>1876.5.3 Flame straightening</b></p> <p>1 A suitable procedure shall be developed in accordance with the requirements for EXC3/4 and shall include the following:</p> <ul style="list-style-type: none"> <li>• the materials being used for procedure approval purposes shall be of a higher grade and subgrade than that used in the component being straightened;</li> <li>• for destructive tests, any reduction in tensile strength shall not exceed 5% of the original value and any reduction in Charpy energy shall not exceed 10% of the original value at the same test temperature.</li> </ul> <p><b>1876.5.4 Cold forming (AS) (18/1)</b></p> <p><b>1876.6 Holing</b></p> <p><b>1876.6.3 Execution of holing</b></p> |
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- 1 For plates 3mm thick or less with a quantified service category of less than F71, round holes for fasteners or pins may be formed by punching without reaming as permitted for EXC1/2. For plates 3mm thick or less with a quantified service category of F71 and above, round holes for fasteners or pins shall be drilled or be punched at least 2mm undersize in diameter and reamed after punching.
- 2 For plates thicker than 3mm, round holes for fasteners or pins shall be drilled or be punched at least 2mm undersize in diameter and reamed after punching in accordance with the requirements for EXC3/4.
- 3 For slotted holes the methods given in Table 1 may be used up to the maximum quantified service categories and thicknesses given in Table 1.

**Table 1 Method for slotted holes**

| <b>Method</b>                                                | <b>Maximum quantified service category</b> | <b>Maximum thickness, mm</b> |
|--------------------------------------------------------------|--------------------------------------------|------------------------------|
| Punching and hand thermal cutting                            | F36                                        | -                            |
| Punching in a single operation<br>Thermal cutting my machine | F56                                        | 15                           |
| Drilling and/or milling                                      | F112                                       | -                            |

**1876.7 Cut outs (18/1)**

- 1 The minimum radius for re-entrant corners and notches in all thicknesses of material shall conform to the requirements for EXC2/3, except for quantified service category F71 and above when the requirement for EXC4 shall apply (when the stress direction is in the plane of the radius), subject to a smaller radius not being specified in Appendix 18/1. If Form B in BS EN 1090-2:2008+A1:2011, 6.7 is to be used, the design shall be checked for the loss of section.
- 2 The restriction on the use of punched cut outs required for EXC4 shall apply where:
  - quantified service categories F56 and above are required;
  - materials conforming to BS EN 10025-6 are used.

**1876.9 Assembly (18/1)**

- 1 Elongations of holes by drifting shall be limited according to the tolerance class for EXC1/2 when applied to non-preloaded connected parts. The tolerance class for EXC3/4 shall apply to preloaded connected parts.
- 2 All connections for temporary components shall be executed in accordance with the requirements of this Series including those

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|                      | <p>specified in Appendix 18/1, according to the quantified service category appropriate to the connection location. (See also 1877.5.6)</p> <p>3 Connections for temporary components shall not result in the removal or addition of permanent material, or introduce permanent notches unless permitted by Appendix 18/1.</p> <p><b>1876.10 Assembly check (18/1)</b></p> <p>1 Where a full or staged trial assembly is undertaken the correction of hole alignment by reaming of bolted splices, selection of pack thicknesses, correction of weld preparation fit-up and correct positioning of temporary alignment cleats shall be carried out at that time.</p> <p>2 The following shall be taken into account:</p> <ul style="list-style-type: none"> <li>• support of the assembly parts to minimise dead weight deflections;</li> <li>• correct re-establishment of the alignment of assembly parts in staged trial assembly;</li> <li>• control of, or allowance for, differential temperature distributions throughout the steelwork if exposed to direct sunlight when surveys are made;</li> <li>• unique marking for identification and orientation of individual members.</li> </ul>            |
| <p><b>1877NR</b></p> | <p><b>1877 Welding</b></p> <p><b>1877.1 General (18/1)</b></p> <p>1 The BS EN ISO 3834 quality requirements shall conform to the requirements for EXC3/4, unless EXC2 is specified in Appendix 18/1</p> <p>2 The constructor shall ensure that the scope of work for which their welding management systems have been approved by their Certification Body is clearly defined on a schedule.</p> <p>3 Permanent welds that are not specified on the drawings referred to in Appendix 18/1 shall not be permitted.</p> <p><b>1877.2 Welding plan</b></p> <p>1 Requirements for a welding plan (AS)</p> <p>2 Content of a welding plan (AS)</p> <p><b>1877.4 Qualification of welding procedures and welding personnel</b></p> <p><b>1877.4.1 Qualification of welding procedures</b></p> <p><b>1877.4.1.1 General</b></p> <p>1 Where tack welds are used in the root of a preparation, a weld procedure specification (WPS) shall be produced for this specific condition. The tolerances on size and length of the tack weld and any subsequent profiling requirements shall be specified in the WPS. The WPS shall state whether the tack weld is intended to be fully re-melted by the root run or not.</p> |



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|  | 2 | If the tack weld is to be removed prior to welding of the joint, the minimum permitted size of tack weld shall be subject to a welding procedure test in accordance with BS EN ISO 15614-1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|  | 3 | If the tack weld is to be left in the joint, the maximum cross section of tack weld shall be used and the root and subsequent passes shall be deposited until such time as the root pass is fully covered. The full length of the tack weld location shall be subjected to a welding procedure test in accordance with BS EN ISO 15614-1 (see Table 11, footnote A)                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|  | 4 | The tack weld shall be assumed to be a fillet weld for the purposes of qualification.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|  |   | <b>1877.4.1.2 Qualification of welding procedures for processes 111, 114, 12, 13 and 14</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|  | 1 | Methods of qualification shall be in accordance with those permitted for EXC3/4 in BS EN 1090-2:2008+A1:2011, Table 12.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|  | 2 | The weld procedure qualification acceptance levels in BS EN ISO 15614-1 are less stringent in some respects than those required for FPC for EXC3/4 (see BS EN 1090-2:2008+A1:2011, 7.6). Also, for the highest quantified service categories, the acceptance limits for certain imperfection types are more stringent than for EXC4 (see 1882.4.2.3 and 1882.4.2.4). If either of these criteria are being used for FPC the relevant weld procedure qualification acceptance levels shall be amended. Existing procedures qualified to BS EN ISO 15614-1 shall be re-qualified accordingly by reference to the original test results, if possible. If this cannot be done, or the original results do not conform to the more stringent requirements, the relevant qualification tests for evaluation of imperfections shall be repeated. |
|  | 3 | Joints with restricted access for welding (e.g. slot and plug welds, shallow angle branch connections), shall be subject to procedure testing in accordance with BS EN ISO 15613.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|  |   | <b>1877.4.1.3 Qualification of welding procedures for other welding processes (processes 21, 22, 23, 24, 42, 52, 783 and 784) (AS)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|  |   | <b>1877.4.1.4 Validity of a welding procedure qualification</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|  | 1 | Welding production tests shall be carried out in accordance with the qualification standard for the process concerned.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|  |   | <b>1877.4.1.5 Welders and welding operators</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|  | 1 | Welders shall be qualified by specific test for welding of joints with restricted access (see 1877.4.1.2 (3)).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|  |   | <b>1877.4.3 Welding co-ordination</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|  | 1 | Welding co-ordination shall conform to the requirements for EXC2/3/4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|  |   | <b>1877.5 Preparation and execution of welding</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|  |   | <b>1877.5.1 Joint preparation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|  |   | <b>1877.5.1.1 General</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|  | 1 | Where prefabrication primers are to be left on fusion faces, the weld                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

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|  | <p>procedures shall be tested in accordance with the requirements for EXC3/4.</p> <p><b>1877.5.1.2 Hollow sections (AS)</b></p> <p><b>1877.5.4 Assembly for welding</b></p> <p>1 The guidance on preparation, assembly and welding of joints in hollow sections given in BS EN 1090-2:2008+A1:2011, Annex E shall be applied. Regarding the assembly of hollow sections, particular attention shall be paid to the following:</p> <ul style="list-style-type: none"> <li>• adequate access for penetration to the root in the case of full penetration butt welds. Where access is restricted a pre-production welding test conforming to BS EN ISO 15613 shall be conducted;</li> <li>• compensation for loss of throat and leg length in the case of fillet welded joints with root gaps (see BS EN 1090-2:2008+A1:2011, 7.5.8.1).</li> </ul> <p><b>1877.5.5 Preheating (AS)</b></p> <p><b>1877.5.6 Temporary attachments (18/1)</b></p> <p>1 Temporary welded attachments shall not be permitted in zones of quantified service categories F112 and above, or within 25mm of an edge, or where specified in Appendix 18/1.</p> <p>2 The use of temporary welded attachments shall be specified as required for EXC3/4.</p> <p>3 Restrictions on the removal of temporary welded attachments shall be in accordance with the requirements for EXC3/4 for thermal cutting and chipping, except that thermal cutting may be used if not closer than 3mm from the original member surface. Remnants of temporary materials proud of the original member surface shall be removed by grinding parallel to the member axis and the ground surface checked for freedom from cracking using magnetic particle testing.</p> <p><b>1877.5.7 Tack welds</b></p> <p>1 Tack welds shall be made using qualified welding procedures as required for EXC2/3/4 (see 1877.4.1.1).</p> <p><b>1877.5.9 Butt welds</b></p> <p><b>1877.5.9.1 General (18/1)</b></p> <p>1 Run-on and run-off pieces shall be used on all butt welds and shall conform to the requirements for EXC3/4, where access allows.</p> <p>2 Where a weld surface is required to be ground or machined flush, this shall be executed prior to non-destructive testing.</p> <p><b>1877.5.9.2 Single sided welds (18/1)</b></p> <p>1 Permanent steel backing shall only be used if specified in Appendix 18/1. The continuity of permanent steel backing shall conform to the requirements for EXC3/4. The execution of the continuity weld shall depend upon the quantified service category related to stresses parallel to the axis of the backing component, as follows:</p> <ul style="list-style-type: none"> <li>• F36: no additional requirements;</li> </ul> |
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|                      | <ul style="list-style-type: none"> <li>• F56 to F90: make continuous by full penetration butt weld at any stage, followed by surface crack detection;</li> <li>• F112 to F140: make continuous by full penetration butt weld, followed by flush grinding and surface crack detection before assembly.</li> </ul> <p><b>1877.5.10 Welds on steels with improved atmospheric corrosion resistance</b></p> <p>1 The requirements for the consumables to be used for welds on steels with improved atmospheric corrosion resistance are given in 1875.5.</p> <p><b>1877.5.12 Stud welding</b></p> <p>1 With reference to BS EN ISO 14555:2006, Annex B Table B.1, the comprehensive quality requirements in accordance with ISO 3834-2 shall be adopted.</p> <p><b>1877.5.13 Slot and plug welds (18/1)</b></p> <p>1 The depth-to-minimum width ratio of the slot or plug hole shall not exceed that used for the weld procedure qualification test.</p> <p><b>1877.5.17 Execution of welding (18/1)</b></p> <p>1 The requirements for removal of weld spatter shall conform to the requirements for EXC3/4 except where permitted in Tables 7 and 8. The requirements for EXC3/4 shall apply to exposed steels to BS EN 10025-5 and BS EN 10088-1.</p> <p>2 The direction of grinding of the surfaces of completed welds shall be parallel to the stress direction for welds with a quantified service category of F90 and above.</p> <p><b>1877.6 Acceptance criteria</b></p> <p>1 Acceptance criteria for FPC shall not be to a lower standard than that required for specific testing of the work, taking into account the method of testing and maximum quantified service category required for the work (See 1882.4.2.3 and 1882.4.2.4 for acceptance levels for specific testing).</p> <p><b>1877.7 Welding of stainless steels</b></p> <p><b>1877.7.2 Amendments to EN 1011-3 requirements (18/1)</b></p> <p>1 Coloured oxide films shall be removed.</p> <p>2 Copper backing shall be nickel or chromium plated and when high heat input is used it shall be water cooled.</p> <p><b>1877.7.3 Welding dissimilar steels (AS) (18/1)</b></p> |
| <p><b>1878AR</b></p> | <p><b>1878 Mechanical Fastening</b></p> <p><b>1878.2 Use of bolting assemblies</b></p> <p><b>1878.2.1 General (18/1)</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

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|  | 1 | <p>Welding of nuts, bolts or washers shall not be used on bolt assemblies above property class 4.6. Welding of property class 4.6 nuts, bolts and washers shall only be undertaken where specified in Appendix 18/1 and shall be subject to the requirements in 1877, 1882.4 and BS EN 1090-2:2008+A1:2011, 7.</p> <p><b>1878.2.4 Washers (18/1)</b></p> <p>1 Washers shall be placed under the nut or head of the bolt in non-preloaded assemblies whichever is rotated.</p> <p><b>1878.4 Preparation of contact surfaces in slip resistant connections (18/1)</b></p> <p>1 All surfaces which overlap each other in the final assembled connection excluding any painted edge strip around the perimeter of the connection described in Series 1900, 1906 shall be deemed to be 'contact surfaces'.</p> <p>2 The specified surface treatment applied to the friction surfaces shall be maintained until the surfaces are brought together and the connection assembled.</p> <p><b>1878.5 Tightening of preloaded bolts</b></p> <p><b>1878.5.1 General (18/1)</b></p> <p>1 At the snug tight stage, the exposed surfaces of the components being connected shall be aligned within 1mm where they emerge from beneath the cover plate(s) at the joint plane. This is subject to the tolerances of thickness difference between the two components (including any packing plates) in BS EN 1090-2:2008+A1:2011, 8.1 also being met. If this is exceeded, steel packing plates shall be used.</p> <p>2 In the case of preloaded lap joints subject to axial load only in the plane of the friction surfaces, the out of plane bending stiffness of cover plates may need to be limited to achieve adequate contact between friction surfaces. Measures to limit the out-of-plane bending stiffness of cover plates shall be as specified in Appendix 18/1. Additional contact surfaces shall be treated as contact surfaces in slip resistant connections.</p> <p>3 Where a connection is designed to transfer applied tensile forces through a flanged and bolted end plate, as a minimum, the area of the mating surfaces in direct line with the tension member cross section shall be in contact when all bolts are snug tight. Any remaining gaps in this zone shall be filled by steel shims prior to the application of the remaining preload. If necessary, bolts can be partially slackened to enable shims to be inserted. The shims shall not be loose in the final snug tight stage. In the event of a tapering gap, a purpose machined tapered steel shim may be used. As an alternative, flat (parallel) steel shims of not less than 0.1mm and of not more than 0.2mm thick shall be inserted to refusal in steps until the gap in the contact zone is filled, followed by retightening to the snug tight stage.</p> <p>4 The part turn method may be used for tightening preloaded bolts if:</p> <ul style="list-style-type: none"> <li>• the bolts are property class 8.8 and assemblies conform to 1875.6.4;</li> </ul> |
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- the minimum required preloading force is not in excess of the values specified in BS EN 1090-2:2008+A1:2011, Table 19; and
  - the joint fit-up conforms to 1878.5.1(1) or 1878.5.1(3) above, whichever is applicable.
- 5 The part turn method is the same as the combined method in BS EN 1090-2:2008+A1:2011, 8.5.4, except that:
- K<sub>o</sub> bolt assemblies may be used;
  - In the first tightening step the nut shall be tightened to a specified torque, as given in Table 2 of this Series;
  - In the second tightening step the nut shall be tightened to a specified turn as given in Table 3 of this Series.

**Table 2 Torque values for the part turn method – step one**

|                     |    |     |     |     |     |
|---------------------|----|-----|-----|-----|-----|
| Bolt diameter d, mm | 16 | 20  | 22  | 24  | 27  |
| Torque value M, Nm  | 80 | 160 | 210 | 270 | 340 |

**Table 3 Rotation values for the part turn method – step two**

| Bolt diameters, mm | Grip length <sup>A)</sup> , mm | Rotation, °  |
|--------------------|--------------------------------|--------------|
| 16 to 22           | ≤115                           | 180 (½ turn) |
|                    | 115 < ≤275                     | 270 (¾ turn) |
| 24 to 30           | ≤160                           | 180 (½ turn) |
|                    | 160 < ≤350                     | 270 (¾ turn) |

<sup>A)</sup> Equal to nominal thickness, *t*, in BS EN 1090-2:2008+A1:2011, Table 21

- 6 The torque method shall not be used for the tightening of preloaded bolts unless specified in Appendix 18/1.

**1878.5.2 Torque reference values (AS)**

**1878.5.3 Torque method**

- 1 The *k* value shall be checked daily with torque wrenches in accordance with BS EN 1090-2:2008+A1:2011, Annex. H and the torque for both tightening steps adjusted accordingly. Any assembly lots that fail to conform to this test shall be discarded.

**1878.5.4 Combined method**

- 1 For property class 8.8 and 10.9 bolt assemblies to BS EN 14399-3 (see 1875.6.4), the further rotation values in BS EN 1090-2:2008+A1:2011, Table 21 shall be amended as follows for the same thickness ranges:

- replace 60° by 90° (¼ turn);
- replace 90° by 120° (1/3 turn);
- replace 120° by 180° (½ turn).

- 2 The *k* value shall be checked daily with the torque wrenches in

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|                | <p>accordance with BS EN 1090-2:2008+A1:2011, Annex H and the torque for the first tightening step adjusted accordingly. Any assembly lots that fail to conform to this test shall be discarded.</p> <p>3 The simplified value of <math>M_{r,1} = 0.13dF_{p,C}</math> shall not be used.</p> <p><b>1878.5.5 HRC method</b></p> <p>1 The preload shall be checked on sample assemblies for each assembly lot within seven days prior to use, in accordance with BS EN 1090-2:2008+A1:2011, Annex H. Any assembly lots showing values of preload below the minimum specified value shall be discarded.</p> <p>2 The pre-tightening step shall be repeated until the shear wrench outer socket has stopped turning on all assemblies in a joint.</p> <p><b>1878.5.6 Direct tension indicator method (AS)</b></p> <p><b>1878.6 Fit bolts (AS)</b></p> <p><b>1878.7 Hot riveting</b></p> <p><b>1878.7.1 Rivets (AS)</b></p> <p><b>1878.7.2 Installation of rivets (AS) (18/1)</b></p> <p><b>1878.7.3 Acceptance criteria (AS) (18/1)</b></p> <p><b>1878.8 Fastening of thin gauge components</b></p> <p><b>1878.8.1 General (AS)</b></p> <p><b>1878.8.2 Use of self-tapping and self-drilling screws (AS)</b></p> <p><b>1878.8.3 Use of blind rivets (AS)</b></p> <p><b>1878.8.4 Fastening sidelaps (AS) (18/1)</b></p> <p><b>1878.9 Use of special fasteners and fastening methods (AS) (18/1)</b></p> <p><b>1878.10 Galling and seizure of stainless steels (AS)</b></p> |
| <b>1879 AR</b> | <p><b>1879 Erection</b></p> <p><b>1879.1 General (AS)</b></p> <p><b>1879.2 Site conditions (AS)</b></p> <p><b>1879.3 Erection method</b></p> <p><b>1879.3.1 Design basis for the erection method (AS)</b></p> <p><b>1879.3.2 Constructor's erection method (AS)</b></p> <p><b>1879.4 Survey</b></p> <p><b>1879.4.1 Reference system (18/1)</b></p> <p>1 The reference temperature shall be 15°C, unless otherwise specified in Appendix 18/1. The reference temperature shall be recorded in the quality plan.</p> <p><b>1879.4.2 Position points (AS)</b></p> <p><b>1879.5 Supports, anchors and bearings</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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|  | <p><b>1879.5.1 Inspection of supports (AS)</b></p> <p><b>1879.5.2 Setting out and suitability of supports (AS)</b></p> <p><b>1879.5.3 Maintaining suitability of supports (AS) (18/1)</b></p> <p><b>1879.5.4 Temporary supports (18/1)</b></p> <p>1 Levelling nuts shall be slackened off before final tensioning of foundation bolts where a post-tensioning force is specified, to allow the post-tensioning force to be transferred to the foundations.</p> <p>2 In the case of exposed steelwork and irrespective of bedding material, the minimum finished cover to steel packings left in position shall be 50mm.</p> <p><b>1879.5.5 Grouting and sealing (18/1)</b></p> <p>1 Unless otherwise specified in Appendix 18/1, the surfaces of steelwork and bearings that are to be in contact with grout or bedding mortar shall be treated in accordance with 1880.7.</p> <p><b>1879.5.6 Anchoring (AS)</b></p> <p><b>1879.6 Erection and work at site</b></p> <p><b>1879.6.1 Erection drawings (AS)</b></p> <p><b>1879.6.2 Marking (AS)</b></p> <p><b>1879.6.3 Handling and storage on site</b></p> <p>1 The defined procedure for restoration of damaged steelwork shall conform to the requirements for EXC2/3/4, and shall be approved by the Design Organisation in advance of implementation.</p> <p>2 The processes used for the restoration of damaged steelwork shall be in accordance with the requirements of this Series.</p> <p><b>1879.6.4 Trial erection (AS)</b></p> <p><b>1879.5 Erection methods</b></p> <p><b>1879.5.1 General (AS)</b></p> <p><b>1879.5.2 Temporary works (AS)</b></p> <p><b>1879.5.3 Fit-up and alignment</b></p> <p>1 The use of shims shall be avoided where possible by suitable controls on preparation, assembly and weld distortion and, if necessary, by machining.</p> <p>2 If welding is required for securing purposes, it shall be carried out in accordance with BS EN 1090-2:2008+A1:2011, 7 as required for EXC3/4 in BS EN 1090-2:2008+A1:2011, 9.6.5.3. The requirements of Clause 1877 and 1882.4 shall apply.</p> <p>3 Where steel shims are needed to correct the fit between members, particularly in preloaded tension joints (see 1878.5.1), and where gaps are variable across the interface, flat (parallel) steel shims may be used as an alternative to a purpose machined tapered steel shim. The gap shall be filled by insertion of shims of not less than 0.1mm and not more than 0.2mm thick from the widest gap position until refusal. The excess</p> |
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|                | material shall be cut off on completion.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>1880 AR</b> | <p><b>1880 Surface Treatment</b></p> <p><b>1880.1 General (18/1)</b></p> <p>1 Treatment of surfaces to receive corrosion protection shall be in accordance with Series 1900.</p> <p>2 The performance specification required by BS EN 1090-2:2008+A1:2011, F.1.2 shall be as given in Appendix 19/1.</p> <p>3 The prescriptive requirements for corrosion protection required by BS EN 1090-2:2008+A1:2011, F.1.3 shall be as given in Series 1900.</p> <p>4 Surface preparation of carbon steels prior to galvanising in BS EN 1090-2:2008+A1:2011, F.2.2 shall be supplemented by those in Series 1900.</p> <p>5 With reference to BS EN 1090-2:2008+A1:2011, F.4, the requirements for friction surfaces and class of treatment or tests required for surfaces in slip resistant connections shall be as described in Appendix 18/1.</p> <p>6 With reference to BS EN 1090-2:2008+A1:2011, F.4, where corrosion protection is specified, the requirements for corrosion protection and extent of surfaces to be painted at preloaded connections shall be as given in Series 1900, Clause 1906 and Appendix 19/5.</p> <p>7 With reference to BS EN 1090-2:2008+A1:2011, F.4, the extent of surfaces affected by preloaded bolts in connections that are not required to be slip resistant shall be as given in Appendix 18/1.</p> <p>8 The requirements for the protection of the lower embedded part of foundation bolts shall be as described in BS EN 1090-2:2008+A1:2011, F.5, unless otherwise specified in Appendix 18/1.</p> <p>9 The requirements for galvanizing in BS EN 1090-2:2008+A1:2011, F6.3 shall be supplemented by those in Series 1900, Clause 1909.1.</p> <p>10 With reference to BS EN 1090-2:2008+A1:2011, F6.3, for components that are to be galvanized after manufacture, the requirements for procedure qualification of the dipping process shall be as given in Appendix 18/1.</p> <p>11 With reference to BS EN 1090-2:2008+A1:2011, F6.3, the requirements for the inspection, checking and qualification of the preparation to be carried out before subsequent overcoating of galvanized components shall be as given in Appendix 18/1.</p> <p>12 With reference to BS EN 1090-2:2008+A1:2011, F.7.3, reference areas shall be as required by Series 1900, Clause 1915.</p> <p><b>1880.2 Preparation of steel substrates for paints and related products (18/1)</b></p> <p>1 All surfaces shall meet the requirements of BS EN ISO 8501-3:2007 preparation grade P3, unless otherwise specified in Appendix 18/1.</p> <p>2 All edges requiring preparation grade P3 shall be rounded to a radius of</p> |



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|               | <p>not less than 3mm, the rounding being tangential to the original surfaces (see BS EN ISO 12944-3:1998, 5.4 and Fig. D.5).</p> <p><b>1880.3 Weather resistance steels (18/1)</b></p> <p>1 Exposed surfaces of weather resistant steel shall be blast cleaned to grade Sa2 to BS EN ISO 8501-1 to achieve a uniform surface. Any surfaces that are subsequently marked or contaminated shall be cleaned to a similar standard.</p> <p>2 Weather resistant steel shall be kept free of contamination such as oil, grease, paint, concrete and asphalt.</p> <p><b>1880.4 Galvanic coupling (AS)</b></p> <p><b>1880.5 Galvanizing (AS) (18/1)</b></p> <p><b>1880.6 Sealing of spaces (18/1)</b></p> <p>1 All internal spaces which have been identified as being hermetically sealed in Appendix 18/1 shall have all joints, whether welded, mechanically fastened or bonded, leak tested prior to application of the external protective coating (see BS EN 1779). The bubble emission technique in accordance with BS EN 1593 shall be used.</p> <p><b>1880.7 Surfaces in contact with concrete (18/1)</b></p> <p>1 When formwork is in contact with the outer surfaces of the steelwork the embedded length shall be measured from the junction between the concrete, the formwork and the steelwork.</p> <p><b>1880.8 Inaccessible surfaces</b></p> <p>1 Faying surfaces and surfaces beneath washers in connections other than slip resistant connections that are to be painted shall be treated in accordance with Series 1900.</p> <p>2 In weather resisting steels, faying surfaces and surfaces beneath washers in connections other than slip resistant connections shall be cleaned to grade St2 to BS EN ISO 8501-1 immediately prior to the connection being made.</p> <p><b>1880.9 Repairs after cutting or welding (18/1)</b></p> <p>1 Protective treatment on edges and adjacent surfaces which have been damaged by cutting shall be restored in accordance with the original specification.</p> <p>2 Coatings on precoated constituent products that have been damaged by welding shall be restored in accordance with Appendix 18/1</p> <p><b>1880.10 Cleaning after erection</b></p> <p><b>1880.10.1 Cleaning of thin gauge components (AS)</b></p> <p><b>1880.10.2 Cleaning of stainless steel components (AS) (18/1)</b></p> |
| <b>1881AR</b> | <p><b>1881 Geometrical Tolerances</b></p> <p><b>1881.1 Tolerance types (18/1)</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

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|                       | <p>1 Where full contact end bearing is specified (see BS EN 1090-2:2008+A1:2011, D.1.13) special tolerances are required. The maximum gap between the two surfaces shall be limited to 0.5mm. In the case of fitted web stiffeners, the gap shall also be limited to a maximum of 0.25mm over 60% of the fitted area.</p> <p><b>1881.2 Essential tolerances</b></p> <p><b>1881.2.1 General (AS)</b></p> <p><b>1881.2.2 Manufacturing tolerances</b></p> <p><b>1881.2.2.1 Rolled sections (AS)</b></p> <p><b>1881.2.2.2 Welded sections(AS)</b></p> <p><b>1881.2.2.3 Cold formed sections (AS)</b></p> <p><b>1881.2.2.4 Stiffened plating (AS)</b></p> <p><b>1881.2.2.5 Profiled sheets (AS)</b></p> <p><b>1881.2.2.6 Shells (AS)</b></p> <p><b>1881.2.3 Erection tolerances</b></p> <p><b>1881.2.3.1 Reference system (AS)</b></p> <p><b>1881.2.3.2 Foundation bolts and other supports (AS)</b></p> <p><b>1881.2.3.3 Column bases (AS)</b></p> <p><b>1881.2.3.4 Columns (AS)</b></p> <p><b>1881.2.3.5 Full contact bearing (AS)</b></p> <p><b>1881.3 Functional tolerances</b></p> <p><b>1881.3.1 General (AS)</b></p> <p><b>1881.3.2 Tabulated values</b></p> <p>1 Functional tolerance class 1 shall be adopted except in the following cases from BS EN 1090-2:2008+A1:2011 where class 2 shall be adopted:</p> <ul style="list-style-type: none"> <li>• D.2.1 (1 to 6) at bearing and bearing stiffener locations;</li> <li>• D.2.3 (3);</li> <li>• D.2.7 (3 and 4).</li> </ul> <p><b>1881.3.3 Alternative criteria (AS) (18/1)</b></p> |
| <p><b>1882 AR</b></p> | <p><b>1882 Inspection, Testing and Correction</b></p> <p><b>1882.1 General (AS)</b></p> <p><b>1882.2 Constituent products and components</b></p> <p><b>1882.2.1 Constituent products (18/1)</b></p> <p>1 Specific testing of products not covered by the European or International standards references in BS EN 1090-2:2008+A1:2011 shall be as specified in Appendix 18/1.</p> <p>2 The Constructor shall verify that mechanical fasteners conform to the</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

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|  | <p>purchase requirements and the requirements of the product standard to which the mechanical fasteners have been manufactured (see 1870.5.2(1)). Reports of the verification undertaken shall be prepared and shall form part of the execution documentation (see 1874.2.4). The verification shall include:</p> <ul style="list-style-type: none"> <li>• Obtaining evidence of certification of the quality of the mechanical fasteners such as the manufacturer’s declaration of performance under a CE mark, manufacturer’s certificates and test reports from manufacturer’s or suppliers.</li> <li>• Review of the mechanical fastener documentation to confirm authenticity, relevance, accuracy and completeness.</li> <li>• Inspection and sample testing of the mechanical fasteners to be used in the works in accordance with BS EN ISO 3269:2001, to confirm that the dimensional and mechanical properties comply with the product standard to which the mechanical fasteners have been manufactured. The inspection and sample testing shall use an AQL of 0.65 for non-destructive tests, an AQL of 1.5 for destructive tests, and an Ac Level of 0(zero).</li> </ul> <p>3 In addition to the requirements of 1882.2.1(2) or 1870.5.2(1) as appropriate, the Constructor shall undertake suitability testing of mechanical fasteners in accordance with a relevant standard. For each inspection lot of mechanical fasteners supplied for use in the works, three fasteners shall be drawn at random and tested in accordance with the suitability test related to the product standard to which the mechanical fasteners have been manufactured. The mechanical fasteners that are subjected to the suitability testing shall be discarded following testing. In the event of a mechanical fastener not meeting the requirements of the suitability test, all mechanical fasteners in the associated inspection lot shall be discarded. The suitability testing shall be reported in accordance with the relevant standard, and the reports shall form part of the execution documentation (see 1874.2.4).</p> <p><b>1882.2.2 Components (AS)</b></p> <p><b>1882.2.3 Non-conforming products (AS)</b></p> <p><b>1882.3 Manufacturing: geometrical dimensions of manufactured components (18/1)</b></p> <p>1 The inspection plan shall identify all dimensions which could be at risk of non-conformity. Checks shall be made during execution and action taken to ensure that any non-conformity is corrected at the earliest opportunity. All such dimensions shall be checked before the steelwork is dispatched to site. Components in the neighbourhood of site connections shall be re-checked once the connections are complete.</p> <p>2 Repair of local dents in hollow sections by means of welded cover plates shall not be undertaken unless otherwise specified in Appendix 18/1.</p> <p><b>1882.4 Welding</b></p> <p><b>1882.4.1 Inspection before and during welding (AS)</b></p> <p><b>1882.4.2 Inspection after welding (AS)</b></p> |
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## Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

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|  | <p><b>1882.4.2.1 Timing (AS)</b></p> <p><b>1882.4.2.2 Scope of inspection</b></p> <p>1 All welded joints shall be subject to specific inspection. The scope of specific inspection for each joint shall be 100% visual and in accordance with the extent and methods of supplementary non-destructive testing (NDT) given in Table 4, Table 5 and Table 6 of this Series.</p> <p>2 Table 4 specifies the minimum proportions of welded joints subjected to specific supplementary NDT for shop welds in steel grades up to and including S355 and quantified service category F56, which represent the most common conditions. The percentages in Table 4 shall be applied to the number of joints tested up to weld lengths of one metre in any joint. For joints with weld lengths exceeding one metre, the percentage shall be applied to the proportion of weld in every joint.</p> <p>3 Where other conditions than those assumed in Table 4 apply, the minimum proportion of welded joints to be subjected to specific supplementary NDT shall be increased (or decreased) by one or more levels in accordance with Table 5. This shall be done by applying the next highest (or lowest) proportion using the following sequence of seven increasing levels of proportion: 0%, 2%, 5%, 10%, 20%, 50%, 100%.</p> <p><i>NOTE: For example, if the proportion in Table 4 is 20%, an increase of one level changes the requirement to 50% and a decrease of one level to 10%.</i></p> <p>4 If adjustments are made according to more than one condition in Table 5, the net number of levels shall be used, after adding and/or subtracting the number of levels given in each note.</p> <p><i>NOTE: For example, if the proportion in Table 4 is 100% and the adjustments according to Table 5 are -1, -1 and +1 level respectively, the net adjustment would be -1 level, which would result in a proportion of 50%.</i></p> <p>5 For quantified service category F71 and above for shop welds in steel grades up to and including S355, the minimum proportions of welded joints which shall be subjected to supplementary NDT are specified in Table 6. For other conditions, the proportion tested in Table 6 shall be adjusted in accordance with Table 5 as described in 1882.4.2.2 (3) and (4) for Table 4.</p> <p>6 The selection of EXC in BS EN 1090-2:2008+A1:2011, Table 24 for scope of routine FPC inspection shall be determined by the constructor according to the nature of the work in normal production. It shall be not less than the specific inspections required in 1882.4.2.2(1) to (5), whichever is the greater.</p> <p><i>NOTE: Any FPC inspections undertaken on a specific structure which conform to Table 4 in this Series, providing that the acceptance criteria in 1882.4.2.3 and 1882.4.2.4 are fully met, can be regarded and documented as part of the specific inspection required in 1882.4.2.2(1) to (5).</i></p> |
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Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

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|  | <p><b>1882.4.2.3 Visual inspection of welds</b></p> <p>1 The criteria for final acceptance without the need for repair shall be in accordance with Table 7 and Table 8 in this Series. These criteria shall apply irrespective of those adopted for FPC.</p> <p>2 The selection of EXC in BS EN 1090-2:2008+A1:2011, 7.6 for the purposes of routine FPC of visual weld quality shall be determined by the constructor, according to the nature of the work in normal production.</p> <p><b>1882.4.2.4 Additional NDT methods</b></p> <p>1 The criteria for final acceptance without the need for repair shall be in accordance with Table 9 for magnetic particle and penetrant testing and Table 10 for ultrasonic and radiographic testing. These criteria shall apply irrespective of those used for FPC.</p> <p>2 The selection of the EXC in BS EN 1090-2:2008+A1:2011, 7.6 for the purposes of routine FPC of NDT based weld quality shall be determined by the constructor, according to the nature of the work in normal production.</p> <p><i>NOTE: The capability of proving that some of the criteria are met can depend on the method of testing.</i></p> <p><b>1882.4.2.5 Correction of welds</b></p> <p>1 Repairs shall be carried out as required for EXC2/3/4.</p> <p><b>1882.4.3 Inspection and testing of welded shear studs for composite steel and concrete structures</b></p> <p>1 With reference to BS EN ISO 14555:2006, 14.2.1, production tests shall be carried out for all combinations of stud diameter, parent material and type of equipment that are to be used.</p> <p>2 Production tests in accordance with BS EN ISO 14555:2006, 14.2 shall be repeated after every 5000 welds.</p> <p>3 Every stud on a production piece of steelwork shall be tested by striking the side of the head of the stud with a 2kg hammer. The weld shall be considered acceptable if there is a clear ring tone due to the striking. Any stud considered to be unacceptable as a result of this test shall be tested as part of the testing described in 1882.4.3 (4).</p> <p>4 Simplified production tests shall be carried out as required by BS EN ISO 14555:2006, 14.3, and at a minimum rate of 1 test (comprising 3 studs) after every 100 welds on each piece of steelwork, with a minimum of 1 test (comprising 3 studs) per piece.</p> <p>5 Where studs are tested on actual production pieces, the direction of the bend test shall be such that the bent stud shall not interfere with other elements of the works. Studs shall not be bent back after testing.</p> <p>6 The documented results of the production and simplified production tests shall form part of the execution documentation (see 1874.2.4).</p> <p><b>1882.4.4 Production tests on welding</b></p> <p>1 Production tests are required and shall conform to the requirements for</p> |
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## Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

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|  | <p>EXC3/4.</p> <p>2 Specific production testing shall be conducted on run-off coupon plates in accordance with Table 11, and shall apply to all parts of the structure.</p> <p><b>1882.5 Mechanical fastening</b></p> <p><b>1882.5.2 Inspection and testing of preloaded bolted connections</b></p> <p><b>1882.5.2.1 Inspection of friction surfaces (AS) (18/1)</b></p> <p><b>1882.5.2.2 Inspection before tightening</b></p> <p>1 The tightening procedure shall be checked as required for EXC2/3/4.</p> <p><b>1882.5.2.3 Inspection during and after tightening</b></p> <p>1 Inspection during and after tightening shall be as required for EXC2/3/4.</p> <p>2 In BS EN 1090-2:2008+A1:2011, 12.5.2.3c), the number of bolt assemblies inspected overall in a structure shall conform to the requirements for EXC3/4.</p> <p>3 The part turn method shall conform to the requirements of BS EN 1090-2:2008+A1:2011, 12.5.2.3c)i.</p> <p>4 In BS EN 1090-2:2008+A1:2011, 12.5.2.3d) the sampling plan shall conform to the requirements for EXC2/3.</p> <p>5 For the final tightening inspection the bolt assembly shall be checked for over tightening.</p> <p>6 For the part turn method, the inspection and testing requirements of BS EN 1090-2:2008+A1:2011, 12.5.2.5 shall apply except as follows:</p> <ul style="list-style-type: none"> <li>• the first step shall be checked as required for EXC3/4 but using the same torque conditions as given in Table 2 of this Series.</li> <li>• for inspection after the second step, rotation angle values given for the combined method shall be replaced with: <ul style="list-style-type: none"> <li>a) 0° (in lieu of 15°)</li> <li>b) 60° (in lieu of 30°).</li> </ul> </li> </ul> <p><b>1882.5.2.4 Torque method</b></p> <p>1 Inspection of tightening by the torque method shall conform to the requirements for EXC3/4 in BS EN 1090-2:2008+A1:2011, Table 25.</p> <p><b>1882.5.2.5 Combined method</b></p> <p>1 For the combined method, checking of the first step shall conform to the requirements for EXC3/4.</p> <p><b>1882.5.3 Inspection, testing and repairs of hot rivets</b></p> <p><b>1882.5.3.1 Inspection</b></p> <p>1 The sampling plan shall conform to the requirements for EXC2/3.</p> <p><b>1882.7 Erection</b></p> <p><b>1882.7.1 Inspection of trial erection (18/1)</b></p> <p>1 The following checks shall be carried out during trial erection, where applicable, in addition to those that may be specified in Appendix 18/1:</p> |
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**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

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|                      | <ul style="list-style-type: none"> <li>• dimensions critical to assembly to other parts of the structure;</li> <li>• overall horizontal and vertical alignment and twist;</li> <li>• evidence of correct re-establishment of alignment of units in staged trial erection;</li> <li>• temperature differentials in box girders;</li> <li>• fit-up of bolted joints and site welding preparations;</li> <li>• alignment of bolt holes;</li> <li>• identification marks of members and their orientation, including packer plates.</li> </ul> <p><b>1882.7.3 Survey of geometrical position of connection nodes</b></p> <p><b>1882.7.3.1 Survey methods and accuracy</b></p> <p>1 The survey of the completed structure shall conform to the requirements for EXC3/4. This shall include recording of dimensional checks at acceptance of the structure.</p> <p><b>1882.7.3.4 Location and frequency (18/1)</b></p> <p>1 Account shall be taken of the deflection effects due to temporary equipment supported by, or supporting, the erected structure and any non-steelwork dead weight which is in place at the time of measurement of the positional accuracy of the steelwork.</p>                                                                                                                                                                                                                                |
| <p><b>2170AR</b></p> | <p><b>1 Permanent Works Bolts</b></p> <p>1.1 All Permanent Works bolts shall be vibration resistant.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <p><b>2171AR</b></p> | <p><b>1 Bearing Replacement</b></p> <p>1.1 Bearings to new structures</p> <p>1.1.1 Bridges supported on bearings shall be designed to allow the inspection, maintenance, removal and replacement of such bearings without the need to close the bridge to normal traffic. Under such circumstances, only traffic loads due to Load Model 1 and Load Model 2 shall be considered. Other traffic loads shall not apply, i.e., Load Model 3 (Special Vehicles) and Fatigue Load Models need not be considered.</p> <p>1.1.2 Replacement of bearings by jacking shall allow for the effect of the deck being raised by 10 millimetres, or other specified value appropriate to the particular bearing in accordance with the manufacturer’s requirements, to facilitate removal and replacement of bearings.</p> <p>1.1.3 Jacking points shall be designed to accommodate the jacking loads including any fixed / sliding articulation requirements to ensure the overall stability of the structure during bearing replacement operations.</p> <p>1.1.4 The effects due to jacking of a Structure for bearing replacement shall be considered in combination with permanent and variable actions as follows:</p> <ul style="list-style-type: none"> <li>a) ultimate limit state: application of Equation 6.10 of BS EN 1990; and;</li> <li>b) serviceability limit state: as a frequent load combination as</li> </ul> |

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**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

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|                      | <p>defined in Clause 6.5 of BS EN 1990.</p> <p>1.1.5 The location of temporary jacking points and any restrictions on the positioning of jacks, e.g. in relation to jacking stiffeners in steel web plates, and safe working loads assumed in the design of the temporary jacking system shall be clearly identified on the drawings.</p> <p>1.2 Bearings to existing structures</p> <p>1.2.1 The design of replacement bearings shall allow the inspection, maintenance, removal and replacement of such replacement bearings without the need to close the bridge to normal traffic.</p> <p>1.2.2 Replacement of bearings to be undertaken by jacking shall allow for the effect of the deck being raised by 10 millimetres, or other value appropriate to the particular existing and replacement bearings in accordance with the manufacturer's requirements, to facilitate removal and replacement of the bearings.</p> <p>1.2.3 The deck shall be jacked from suitable jacking points which shall accommodate the jacking loads including any fixed / sliding articulation requirements to ensure the overall stability of the structure during bearing replacement operations. Where necessary, the existing deck shall be modified and/or strengthened to accommodate the jacking points to be used in the replacement of the bearings.</p> <p>1.2.4 Replacement bearings shall be designed for the load effects due to Load Models LM1, LM2 and LM3 (Special Vehicles).</p> <p>1.2.5 The location of temporary jacking points and any restrictions on the positioning of jacks, e.g. in relation to jacking stiffeners in steel web plates, and safe working loads assumed in the design of the temporary jacking system shall be clearly identified on the drawings.</p> |
| <p><b>2670AR</b></p> | <p><b>1 Anti-Graffiti Coatings</b></p> <p>1.1 Anti-graffiti coatings shall be of the sacrificial type and shall be capable of being cleaned at least twice before re-coating is necessary</p> <p>1.2 The coating system shall be applied strictly in accordance with the manufacturer's written instructions.</p> <p>1.3 The application of the coating system shall not change the appearance of the substrate.</p> <p>1.4 Prior to application the surface shall be cleaned of all loose material oil grease dirt and existing graffiti. The surface shall be clean and dry before lightly abrading. All loose and flaking paintwork shall be feathered back to a sound edge. A suitable sealer / primer shall be applied to bare areas and areas of graffiti which resist cleaning and may present a problem by showing through the coating system unless sealed.</p> <p>1.5 The cleaning of the coating / removal of graffiti shall not have any detrimental effect on the substrate. Grit-blasting water jetting or the use of chemical cleaning agents likely to have long term effects on the substrate shall not be acceptable.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |



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**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

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|                      | <p><b>1.6</b> Where an existing anti-graffiti coating system is of the type that requires grit-blasting water jetting or the use of chemical cleaning agents likely to affect the substrate then the Company shall consult and comply with the requirements of Transport Scotland (Contact: [REDACTED] , Telephone: [REDACTED]) with regard to the methods proposed. The Company shall provide the Contracting Authority with completed Consultation Certificates in accordance with Part 5 of the New Works Requirements in respect of this requirement.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <p><b>3270AR</b></p> | <p><b>1 Emergency Response</b></p> <p>1.1 Response Time</p> <p>1.1.1 The response time for attendance of the Company's initial and secondary emergency response resources at the scene of an emergency shall be as stated in Table 1 of Appendix 32/1 to Part 5 of Schedule 4 of the Agreement.</p> <p>1.1.2 During the hours of 07.00 to 19.00 Monday to Friday the Company may use the personnel identified to respond to emergency requests for assistance on other operations or parts of the New Works in connection with this Agreement.</p> <p>1.1.3 The emergency response personnel shall however be able to attend at the site of any emergency on any part of the Land Made Available within the response time stated in Appendix 32/1 to Part 5 of Schedule 4 of the Agreement.</p> <p>1.2 Resources for emergency response operations</p> <p>1.2.1 Details of the types of resources that shall be made available by the Company to respond to emergencies shall be as specified in Table 2 of Appendix 32/1 to Part 5 of Schedule 4 of the Agreement.</p> |

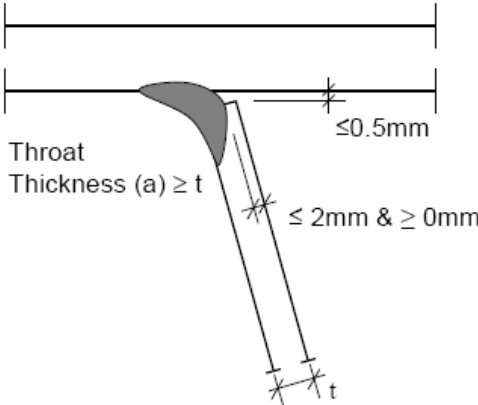
## Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement****Substitute Clauses, Tables and Figures**

| <b>Clause Number</b> | <b>Title and Written Text</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| 1801SR               | <p><b>1 Structural Steelwork - General</b></p> <p>1.1 All steelwork shall be in accordance with BS EN 1090-2:2008 and the Steel Bridge Group Model Project Specification (SCI Publication P382:2009), all as amended by Clauses 1802SR and 1803SR.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 1802SR               | <p><b>1 Amendments to BS EN 1090-2:2008</b></p> <p>1.1 Delete section 5.6.10. Hot rivets are not permitted.</p> <p>1.2 Delete sections 10.1 and 10.2 and Annex F. Surface treatment to be in accordance with SHW Series 1900.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 1803SR               | <p><b>1 Amendments to Steel Bridge Group Model Project Specification</b></p> <p>1.1 Insert in Section 4.101<br/>"BS EN 1090-2 Execution of steel Structures and aluminium Structures Company to add further standards to Appendix 18/1"</p> <p>1.2 Replace Clause 4.201 with<br/>"A quality plan for the execution of the works, in accordance with NHSS 20, shall be provided and maintained."</p> <p>1.3 Delete Clause 6.602. Hot rivets are not permitted.</p> <p>1.4 Insert in section 7.402<br/>"Pre-production welding tests shall be carried out on complex weld configurations and highly fatigue sensitive details. These shall include but are not restricted to the trough to deck weld and the trough to transverse comb weld."</p> <p>1.5 Replace Clause 7.505 with<br/>"Permanent backing material may only be used where the Designer has taken it into account including the joint classification for the backing material in the fatigue design and indicated it on the drawings for construction."</p> <p>1.6 Replace Clause 8.203 with<br/>"The Structure shall not be designed to utilise the shear resistance of the unthreaded shank of bolts."</p> <p>1.7 Delete Clause 8.701 and 8.702. Hot rivets are not permitted on this project.</p> <p>1.8 Delete Clauses 10.1, 10.2, 10.5, 10.6, 10.8 and 10.9. Surface treatment to be in accordance with SHW Series 1900.</p> <p>1.9 Replace 11.302 with,</p> |

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| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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|               | <p>“In addition to the requirements in D.2, the following functional tolerances apply:</p> <p>a) Trough to deck plate weld:</p>  <p>The overall depth of a box section shall be within +/-5 millimetres of that shown on the drawings and within +/-3 millimetres of that of the adjacent section to which it will be joined.</p> <p>The overall width of a longitudinal girder box section shall be within +/-10 millimetres of that shown on the drawings and within +/-5 millimetres of that of the adjacent section to which it will be joined.</p> <p>1.10 Replace Clause 12.701 with,</p> <p>“Trial assembly</p> <p>a) Prior to the approval of fabricated steelwork sections trial assembly shall verify correct geometry once erected. Prior to commencement of the trial assembly the Company shall submit a plan describing the methods and procedures for measuring, recording, and controlling the geometry of the bridge deck. The procedure shall include methods for combining the survey results of each individual trial assembly to calculate and check the cumulative geometry of the complete bridge deck as trial assembly proceeds. Procedures for trial assembly shall be included in the Test plan for this part of the New Works.</p> <p>Trial assembly of bridge deck erection sections</p> <p>b) Each complete bridge deck erection section shall be trial assembled with its adjacent completed erection sections. The trial assembly may be a running trial assembly, in which at least two adjacent erection sections are aligned and temporarily held together, new erection sections being successively built on to one end of the assembly and complete welded-up erection sections removed from the other end. The assembly of a new</p> |

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| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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|               | <p>erection section can be started before two adjacent completed erection sections are temporary held together.</p> <p>c) Each erection section shall be assembled by tack welding the components together while temporarily held to the adjacent erection section. When tack welding two components within one erection section the temperature difference between the two components shall not exceed two degrees Celsius. The components shall be adjusted until, with the erection sections in correct alignment, a correct fit-up is obtained at the longitudinal butt welds within the section and at the peripheral erection weld with the adjacent erection section. Accurate alignment of the stiffeners around the erection welds shall also be obtained.</p> <p>d) Trial assembly shall only take place during temperature conditions where the temperature difference between the deck and bottom panels is less than +/-2 degrees Celsius. Correlation to the reference temperature shall be made if the temperature during trial assembly deviates from the reference temperature. Precautions shall be taken to overcome the effects of differential temperature during assembly, so that the required tolerances are satisfied.</p> <p>e) During trial assembly the support conditions of the erection sections shall resemble the support conditions for the erection sections during erection. Thereby the deformed shape of the erection sections will resemble each other in the two situations. Hence a match between adjacent erection sections is established during trial assembly that later can be re-established on the bridge site. The centre of gravity shall be determined for all deck erection sections and the support reactions shall be measured for all deck erection sections. The Company shall survey and record the geometry of each trial assembly and thereby determine deviations in geometry on single sections and accumulated deviations. The survey shall be carried out using the same survey points. The survey results of each individual trial assembly shall be combined to calculate and check the cumulative geometry of the completed bridge deck assembly relative to the design vertical alignment as trial assembly proceeds.</p> <p>f) The level and profile of deck plates, which form the roadway deck, shall be checked and adjusted if necessary to bring them within tolerances.</p> <p>g) Before completed erection sections are separated, all necessary temporary connections shall be carefully positioned and welded to each section in order to ensure accurate alignment after erection. These connections shall be designed to withstand all forces which are liable to occur during erection.</p> <p>1.11 Delete Clause 12.706.</p> |

## Part 4 Specification

**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | <p>1.12 Delete Annex F. Corrosion protection to be in accordance with SHW Series 1900.</p> <p>1.13 The Company shall complete the following Clauses by providing details in Appendix 18/1:</p> <p>5.101, 5.307, 5.606, 6.501, 5.901, 6.604, 6.606, 6.1001, 7.501, 7.506, 7.508, 7.510, 7.602, 7.603, 8.204, 8.901, 8.902, 9.301, 9.302, 9.303, 9.304, 9.401, 12.201, 12.401, 1 .504, 12.704, 12.707</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>2101SR</b> | <p><b>1 Bridge Bearings – General</b></p> <p><b>1.1</b> Unless otherwise described in Appendix 21/1, bearings shall be supplied and installed in compliance with BS EN 1337 "Structural bearings" consisting of the following parts:</p> <ul style="list-style-type: none"> <li>a) Part 1 - General design rules</li> <li>b) Part 2 - Sliding elements</li> <li>c) Part 3 - Elastomeric bearings</li> <li>d) Part 4 - Roller bearings</li> <li>e) Part 5 - Pot bearings</li> <li>f) Part 6 - Rocker bearings</li> <li>g) Part 7 - Spherical and cylindrical PTFE bearings</li> <li>h) Part 8 – Guided and restrained bearings</li> <li>i) Part 9 - Protection</li> <li>j) Part 10 - Inspection and maintenance</li> <li>k) Part 11 - Transport, storage and installation</li> </ul> <p>excluding subsections relating to corrosion protection which is covered under Series 1900.</p> |

## Part 4 Specification

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**Appendix 0/1: Additional, Substitute and Cancelled Clauses, Tables and Figures Specific to This Agreement**
**PART B: VOLUME 2 NOTES FOR GUIDANCE ON THE SPECIFICATION FOR HIGHWAY WORKS**
**List of SUBSTITUTE Clauses, Tables and Figures**

| Clause Number | Title | Written on Page Number following |
|---------------|-------|----------------------------------|
| None          |       |                                  |

**List of CANCELLED Clauses, Tables and Figures**

| Clause Number         | Title                |
|-----------------------|----------------------|
| <b>Series NG 1800</b> | Structural Steelwork |
| <b>Series NG 2100</b> | Bridge Bearings      |
| <b>Series NG 2200</b> | Parapets             |

## Appendix 0/2: Minor Alterations to Existing Clauses, Tables and Figures Specific to This Agreement

### Minor Alterations to Existing Clauses

| Clause Number      | Title and Written Text                                                                                                                                                                                | Page Number |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 104                | Standards, Quality Assurance, Agrément Certificates and Other Approvals                                                                                                                               |             |
| 121                | Tidal, Flowing and Standing Water                                                                                                                                                                     |             |
| 201                | Clearing                                                                                                                                                                                              |             |
| 306                | Fencing and Environmental Barriers                                                                                                                                                                    |             |
| 920                | Bond Coats, Tack Coats and other Bituminous Sprays                                                                                                                                                    |             |
| 942                | Thin Wearing Course Systems                                                                                                                                                                           |             |
| 1404               | Change of Lighting Arrangements                                                                                                                                                                       |             |
| 1416               | Cut Outs, Fuse Holders, Fuses and Miniature Circuit Breakers                                                                                                                                          |             |
| 1601               | General requirements for Piling and Embedded Retaining Walls                                                                                                                                          |             |
| 1702.2             | Concrete – Constituent Materials                                                                                                                                                                      |             |
| 1711               | Concrete – Grouting and Duct Systems for Post-tensioned Tendons                                                                                                                                       |             |
| 1714               | Reinforcement – Fixing                                                                                                                                                                                |             |
| <b>Table 19/1</b>  | BD 35 Quality Assurance Scheme for Paints and Similar Protective Coatings Annex A Manual of Paints for Structural Steelwork Current Paint Item Numbers                                                | 97          |
| <b>Table 19/2A</b> | Requirements for Bridges, Parapets and Other Highway Structures Except Bearings, CCTV Masts, Cantilever Masts and Steel Lighting Columns and Bracket Arms Surface Preparation and Protective Systems. | 97          |

**Appendix 0/2: Minor Alterations to Existing Clauses, Tables and Figures Specific to This Agreement**

| Clause Number      | Title and Written Text                                                                                                                                                       | Page Number |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| <b>Table 19/2B</b> | Requirements for Bridges, Parapets and Other Highway Structures Except Bearings, CCTV Masts, Cantilever Masts and Steel Lighting Columns and Bracket Arms Protective Systems |             |
| <b>Table 19/3B</b> | Requirements for Steel in Bridge Bearings (and Metal Coated Fasteners) Protective System Type V                                                                              |             |
|                    |                                                                                                                                                                              |             |
| <b>2001</b>        | General                                                                                                                                                                      |             |
| <b>2006</b>        | Workmanship for Waterproofing Below Ground Concrete Surfaces                                                                                                                 |             |
| <b>2007</b>        | Integrity Testing of Concrete Bridge Deck Waterproofing                                                                                                                      |             |
|                    |                                                                                                                                                                              |             |
| <b>2606</b>        | Cored Thermoplastic Node Markers                                                                                                                                             |             |
|                    |                                                                                                                                                                              |             |
| <b>3009</b>        | Establishment Maintenance for Planting                                                                                                                                       |             |

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>104</b>    | <p><b>1 Standards, Quality Assurance, Agrément Certificates and Other Approvals</b></p> <p><b>1.1</b> Sub-Clause 2, line 3<br/>Delete “BS EN ISO 9002” and insert “BS EN ISO 9001. where appropriate and BS EN ISO 14001:2004 (Environmental Management Systems)”.</p> <p><b>1.2</b> Sub-Clause 7, line 3<br/>Delete “BS EN ISO 9002” and insert “BS EN ISO 9001. where appropriate and BS EN ISO 14001:2004 (Environmental Management Systems)”.</p>                                               |
| <b>121</b>    | <p><b>1 Tidal, Flowing and Standing Water</b></p> <p><b>1.1</b> Add at end of Clause:<br/>Notwithstanding any other provisions of this Agreement, the Company shall take adequate precautions to prevent the damage and pollution of streams, waterways and water courses and shall indemnify the Contracting Authority against all claims arising from any such pollution caused by virtue of the operation during the currency of this Agreement. The Company shall make good any unnecessary</p> |



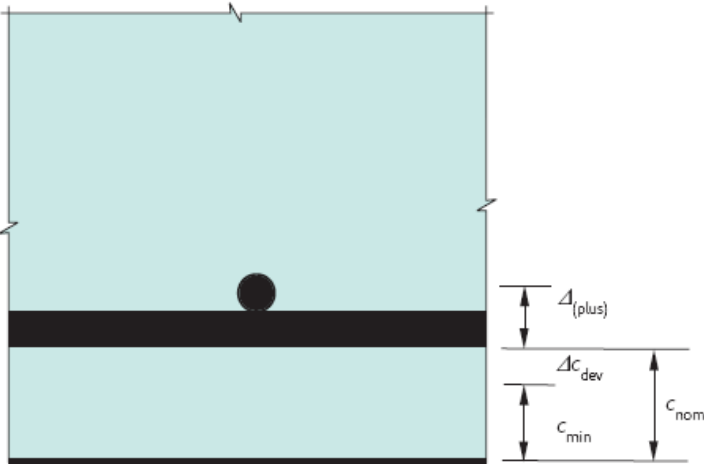
**Appendix 0/2: Minor Alterations to Existing Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | damage to streams, waterways and watercourse at its own expense.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 201           | <p><b>1 Clearing</b></p> <p>1.1 Delete Sub-Clause 3 and insert new Sub-Clause 3:<br/>Disused chambers located under the road pavement, verge or central reserve shall be demolished to a depth of 0.5 metres below formation, properly cleaned out, and filled or capped to meet the requirements of the relevant roads authority. To permit free drainage holes of 76 millimetre diameter (minimum) shall be made at 500 millimetre centres over the whole areas or over 10 per cent of the whole area (whichever is more onerous), of slabs basements etc., which are not removed and which are liable to hold water.</p> |
| 306           | <p><b>1 Fencing and Environmental Barriers</b></p> <p>1.1 Sub-Clause 2, second line:<br/>Delete “four” and replace it with “five”.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 920           | <p><b>1 Bond Coats, Tack Coats and other Bituminous Sprays</b></p> <p>1.1 Sub-Clause 1:<br/>Delete last sentence and replace with "In the event that no British Board of Agrément HAPAS Certificates have been issued in respect of any proprietary bond coats, tack coats, or other bituminous sprays that comply with Sub-Clauses 2 to 12 of this Clause and the requirements specified in Appendix 7/4, detailed proposals accompanied by Quality Plans and method statements appropriate to the project shall be submitted to the Contracting Authority for approval."</p>                                              |
| 942           | <p><b>1 Thin Wearing Course Systems</b></p> <p>1.1 Sub-Clause 14:<br/>Delete “for a period of two years” and insert “for a period of five years”.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1404          | <p><b>1 Change of Lighting Arrangements</b></p> <p>1.1 Insert “written” between “prior” and “approval”.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 1416          | <p><b>1 Cut Outs, Fuse Holders, Fuses and Miniature Circuit Breakers</b></p> <p>1.1 At end of the Clause and following the additions to the Clause in Appendix 0/5 add the following:<br/>(16) Design, execution and completion of the New Works shall ensure that in normal use the unit shall function in a reliable manner and cause no danger to persons or surroundings. Construction shall</p>                                                                                                                                                                                                                        |

**Appendix 0/2: Minor Alterations to Existing Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | <p>be such that the unit shall resist mechanical damage when used under specified service conditions.</p> <p>The unit shall be impact resistant and shall be constructed such that it cannot readily be deformed allowing contact with live parts.</p> <p>The unit shall provide ease of access to allow electrical termination works to be carried out and also provide a positive location arrangement between separable parts.</p> <p>Any separable parts which allow access to live terminations shall be held together by slot headed bolts or screws, with lock washer.</p> <p>A removable insulating shroud shall be installed with the unit, covering all line conductors.</p> <p>(17) Creepage distances and Clearances: Shall be not less than the values given in Table 1, Clause 9, Section 2 of BS 5733.</p> |
| 1601          | <p><b>1 General Requirements for Piling and Embedded Retaining Walls</b></p> <p>1.1 Add to end of item 27.</p> <p>In addition to the records required by Table 16/1 in Series 1600 of the MCHW an ultrasonic survey (1 reading per 5 centimetres) shall be carried out of rock socket excavations to record the socket diameter and verticality in 2 orthogonal directions.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1702.2        | <p><b>1 Concrete – Constituent Materials</b></p> <p>1.1 Add at the end of Clause</p> <p>The minimum testing frequency for drying shrinkage testing, as required by 4.3 of BS8500-2: 2006 shall be in accordance with table 3 of BS812: Part 120: 1989.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1711          | <p><b>1 Concrete – Grouting and Duct Systems for Post-tensioned Tendons</b></p> <p>1.1 Add at end of Section 9</p> <p>The tests indicated in BS EN 446:2007 and TR447:2007 for Inspection Class 3 may be carried in place of those described in TR 47. However a sedimentation test shall be provided for initial type testing of grout.</p> <p>1.2 Add at end of Section 10</p> <p>11. Post tensioning systems</p> <p>In addition to the requirements above, the recommendations according to ETAG 013 must be adopted.</p>                                                                                                                                                                                                                                                                                              |

**Appendix 0/2: Minor Alterations to Existing Clauses, Tables and Figures Specific to This Agreement**

| Clause Number           | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                         |                               |              |    |                  |    |               |    |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------|--------------|----|------------------|----|---------------|----|
| 1714                    | <p><b>1 Reinforcement – Fixing</b></p> <p>1.1 At the end of sub-Clause 1 add the following:<br/>The cover survey shall be carried out by the use of an electronic covermeter with a facility for downloading to a computer. The results shall be included in the bridge maintenance manual.</p> <p>1.2 Delete the first paragraph of Sub-Clause 1714.1 and replace with the following:<br/>Reinforcement shall be secured against displacement. Unless specified otherwise, the actual concrete achieved cover shall be not less than the required minimum cover derived from the exposure class Tables in BS 8500-1, and including any allowance for longer durability required under Clause A5 of BS 8500-1. The maximum achieved cover shall not be more than the nominal cover as defined in BS 8500-1, including the stated fixing tolerance <math>\Delta c</math> plus an additional tolerance away from the concrete surface <math>\Delta(\text{plus})</math> the value of which shall be as described below:</p>  <p><b>Notes</b></p> <ul style="list-style-type: none"> <li><math>c_{\min}</math> = Minimum cover</li> <li><math>\Delta c_{\text{dev}}</math> = Allowance made in design for deviation (towards face of concrete)</li> <li><math>c_{\text{nom}}</math> = <math>c_{\min} + \Delta c_{\text{dev}}</math> = nominal cover</li> <li><math>\Delta_{(\text{plus})}</math> = Permitted deviation (away from face of concrete) – see below</li> <li><math>h</math> = Height of cross-section</li> </ul> <table border="1"> <thead> <tr> <th>Cross-section dimension</th> <th><math>\Delta_{(\text{plus})}</math> (mm)</th> </tr> </thead> <tbody> <tr> <td><math>h \leq 150</math></td> <td>10</td> </tr> <tr> <td><math>150 &lt; h &lt; 2500</math></td> <td>15</td> </tr> <tr> <td><math>h \geq 2500</math></td> <td>20</td> </tr> </tbody> </table> | Cross-section dimension | $\Delta_{(\text{plus})}$ (mm) | $h \leq 150$ | 10 | $150 < h < 2500$ | 15 | $h \geq 2500$ | 20 |
| Cross-section dimension | $\Delta_{(\text{plus})}$ (mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                         |                               |              |    |                  |    |               |    |
| $h \leq 150$            | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                               |              |    |                  |    |               |    |
| $150 < h < 2500$        | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                               |              |    |                  |    |               |    |
| $h \geq 2500$           | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                               |              |    |                  |    |               |    |

**Appendix 0/2: Minor Alterations to Existing Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |             |                                 |            |             |             |                                                                |              |                                                                |                                 |         |  |     |            |            |     |             |            |                                 |  |    |     |     |    |          |     |         |  |     |     |            |             |  |            |                                 |  |  |  |          |          |  |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|---------------------------------|------------|-------------|-------------|----------------------------------------------------------------|--------------|----------------------------------------------------------------|---------------------------------|---------|--|-----|------------|------------|-----|-------------|------------|---------------------------------|--|----|-----|-----|----|----------|-----|---------|--|-----|-----|------------|-------------|--|------------|---------------------------------|--|--|--|----------|----------|--|
| Table 19/1    | <p><b>1 BD 35 Quality Assurance Scheme for Paints and Similar Protective Coatings Annex A Manual of Paints for Structural Steelwork Current Paint Item Numbers</b></p> <p>1.1 Add the following to Table 19/1</p> <table border="1"> <thead> <tr> <th>Item</th> <th>Description</th> <th>Coat Type</th> <th>Build</th> <th>Applied By</th> </tr> </thead> <tbody> <tr> <td>□09</td> <td>Zinc-rich epoxy</td> <td>Blast Primer</td> <td>NB</td> <td>B or AS (B to small areas only)</td> </tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Item          | Description | Coat Type                       | Build      | Applied By  | □09         | Zinc-rich epoxy                                                | Blast Primer | NB                                                             | B or AS (B to small areas only) |         |  |     |            |            |     |             |            |                                 |  |    |     |     |    |          |     |         |  |     |     |            |             |  |            |                                 |  |  |  |          |          |  |
| Item          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Coat Type     | Build       | Applied By                      |            |             |             |                                                                |              |                                                                |                                 |         |  |     |            |            |     |             |            |                                 |  |    |     |     |    |          |     |         |  |     |     |            |             |  |            |                                 |  |  |  |          |          |  |
| □09           | Zinc-rich epoxy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Blast Primer  | NB          | B or AS (B to small areas only) |            |             |             |                                                                |              |                                                                |                                 |         |  |     |            |            |     |             |            |                                 |  |    |     |     |    |          |     |         |  |     |     |            |             |  |            |                                 |  |  |  |          |          |  |
| Table 19/2A   | <p><b>1 Requirements for Bridges, Parapets and Other Highway Structures Except Bearings, CCTV Masts, Cantilever Masts and Steel Lighting Columns and Bracket Arms Surface Preparation and Protective Systems</b></p> <p>1.1 Remove references to “I for Ready Access” and replace “II for difficult access” with “IIa or IIb for difficult access”.</p> <p>1.2 Replace aluminium metal spray protective system required for Area C with Item 109 or 110.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |             |                                 |            |             |             |                                                                |              |                                                                |                                 |         |  |     |            |            |     |             |            |                                 |  |    |     |     |    |          |     |         |  |     |     |            |             |  |            |                                 |  |  |  |          |          |  |
| Table 19/2B   | <p><b>1 Requirements for Bridges, Parapets and Other Highway Structures Except Bearings, CCTV Masts, Cantilever Masts and Steel Lighting Columns and Bracket Arms Protective Systems</b></p> <p>1.1 Replace the standard Type II system with:</p> <table border="1"> <thead> <tr> <th>Type</th> <th></th> <th>Metal Coating</th> <th>1st Coat</th> <th>2nd Coat</th> <th>3rd Coat</th> <th>4th Coat</th> <th>5th Coat</th> <th>Minimum total dry film thickness of the paint system (microns)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">IIa</td> <td>Item No</td> <td></td> <td>109</td> <td>112 or 162</td> <td>112 or 162</td> <td>169</td> <td>169 or 164*</td> <td rowspan="2">400 or 390</td> </tr> <tr> <td>Minimum dry film thickness (µm)</td> <td></td> <td>50</td> <td>125</td> <td>125</td> <td>50</td> <td>50 or 40</td> </tr> <tr> <td rowspan="2">IIb</td> <td>Item No</td> <td></td> <td>110</td> <td>123</td> <td>169 or 164</td> <td>169 or 164*</td> <td></td> <td rowspan="2">525 or 515</td> </tr> <tr> <td>Minimum dry film thickness (µm)</td> <td></td> <td></td> <td></td> <td>50 or 40</td> <td>50 or 40</td> <td></td> </tr> </tbody> </table> <p>* On all externally exposed surfaces on the steel bridge deck the final finish coat of 50 (item number 169) or 40 (item number 164) microns shall be applied on site to ensure colour continuity. The final finish coat shall be applied using a minimum number of paint manufacturing batches applied in a controlled pattern.</p> | Type          |             | Metal Coating                   | 1st Coat   | 2nd Coat    | 3rd Coat    | 4th Coat                                                       | 5th Coat     | Minimum total dry film thickness of the paint system (microns) | IIa                             | Item No |  | 109 | 112 or 162 | 112 or 162 | 169 | 169 or 164* | 400 or 390 | Minimum dry film thickness (µm) |  | 50 | 125 | 125 | 50 | 50 or 40 | IIb | Item No |  | 110 | 123 | 169 or 164 | 169 or 164* |  | 525 or 515 | Minimum dry film thickness (µm) |  |  |  | 50 or 40 | 50 or 40 |  |
| Type          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Metal Coating | 1st Coat    | 2nd Coat                        | 3rd Coat   | 4th Coat    | 5th Coat    | Minimum total dry film thickness of the paint system (microns) |              |                                                                |                                 |         |  |     |            |            |     |             |            |                                 |  |    |     |     |    |          |     |         |  |     |     |            |             |  |            |                                 |  |  |  |          |          |  |
| IIa           | Item No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               | 109         | 112 or 162                      | 112 or 162 | 169         | 169 or 164* | 400 or 390                                                     |              |                                                                |                                 |         |  |     |            |            |     |             |            |                                 |  |    |     |     |    |          |     |         |  |     |     |            |             |  |            |                                 |  |  |  |          |          |  |
|               | Minimum dry film thickness (µm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |               | 50          | 125                             | 125        | 50          | 50 or 40    |                                                                |              |                                                                |                                 |         |  |     |            |            |     |             |            |                                 |  |    |     |     |    |          |     |         |  |     |     |            |             |  |            |                                 |  |  |  |          |          |  |
| IIb           | Item No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               | 110         | 123                             | 169 or 164 | 169 or 164* |             | 525 or 515                                                     |              |                                                                |                                 |         |  |     |            |            |     |             |            |                                 |  |    |     |     |    |          |     |         |  |     |     |            |             |  |            |                                 |  |  |  |          |          |  |
|               | Minimum dry film thickness (µm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |               |             |                                 | 50 or 40   | 50 or 40    |             |                                                                |              |                                                                |                                 |         |  |     |            |            |     |             |            |                                 |  |    |     |     |    |          |     |         |  |     |     |            |             |  |            |                                 |  |  |  |          |          |  |

**Appendix 0/2: Minor Alterations to Existing Clauses, Tables and Figures Specific to This Agreement**

| Clause Number      | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |          |               |          |          |                                                                |          |                                                                |              |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |        |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |
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|                    | ** Applicable only for Area E and painted areas damaged during erection.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |          |               |          |          |                                                                |          |                                                                |              |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |        |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |
| <b>Table 19/3B</b> | <p><b>1 Requirements for Steel in Bridge Bearings (and Metal Coated Fasteners) Protective System Type V</b></p> <p>1.1 Replace Areas A, B, C and D with:</p> <table border="1"> <thead> <tr> <th>Applied over</th> <th></th> <th>Metal Coating</th> <th>1st Coat</th> <th>2nd Coat</th> <th>3rd Coat</th> <th>4th Coat</th> <th>Minimum total dry film thickness of the paint system (microns)</th> </tr> </thead> <tbody> <tr> <td>Area A and D</td> <td>Item No</td> <td></td> <td>109</td> <td>112</td> <td>112</td> <td>168</td> <td>350</td> </tr> <tr> <td></td> <td>Minimum dry film thickness (µm)</td> <td></td> <td>50</td> <td>125</td> <td>125</td> <td>50</td> <td></td> </tr> <tr> <td>Area C</td> <td>Item No</td> <td></td> <td>109</td> <td>112</td> <td>112</td> <td>168</td> <td>350</td> </tr> <tr> <td></td> <td>Minimum dry film thickness (µm)</td> <td></td> <td>50</td> <td>125</td> <td>125</td> <td>50</td> <td></td> </tr> </tbody> </table> | Applied over  |          | Metal Coating | 1st Coat | 2nd Coat | 3rd Coat                                                       | 4th Coat | Minimum total dry film thickness of the paint system (microns) | Area A and D | Item No |  | 109 | 112 | 112 | 168 | 350 |  | Minimum dry film thickness (µm) |  | 50 | 125 | 125 | 50 |  | Area C | Item No |  | 109 | 112 | 112 | 168 | 350 |  | Minimum dry film thickness (µm) |  | 50 | 125 | 125 | 50 |  |
| Applied over       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Metal Coating | 1st Coat | 2nd Coat      | 3rd Coat | 4th Coat | Minimum total dry film thickness of the paint system (microns) |          |                                                                |              |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |        |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |
| Area A and D       | Item No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               | 109      | 112           | 112      | 168      | 350                                                            |          |                                                                |              |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |        |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |
|                    | Minimum dry film thickness (µm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               | 50       | 125           | 125      | 50       |                                                                |          |                                                                |              |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |        |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |
| Area C             | Item No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               | 109      | 112           | 112      | 168      | 350                                                            |          |                                                                |              |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |        |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |
|                    | Minimum dry film thickness (µm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               | 50       | 125           | 125      | 50       |                                                                |          |                                                                |              |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |        |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |
| <b>2001</b>        | <p><b>1 General</b></p> <p>1.1 At end of Sub-Clause 1 add the following:<br/>Surfaces to receive bridge deck waterproofing shall be prepared as recommended in writing by the particular manufacturer and, in addition, shall be given a light grit blast to produce an open texture surface free from laitance and other deleterious materials.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |          |               |          |          |                                                                |          |                                                                |              |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |        |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |
| <b>2006</b>        | <p><b>1 Workmanship for Waterproofing Below Ground Concrete Surfaces</b></p> <p>1.1 At end of Sub-Clause 3 add the following:<br/>The waterproofing shall be applied strictly in accordance with the manufacturer's written instructions at the recommended rate of application.</p> <p>1.2 At end of Sub-Clause 4 add the following:<br/>Details of the proprietary system shall be submitted for the approval of the Contracting Authority prior to the inclusion in the New Works.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               |          |               |          |          |                                                                |          |                                                                |              |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |        |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |
| <b>2007</b>        | <p><b>1 Integrity Testing of Concrete Bridge Deck Waterproofing</b></p> <p>1.1 Testing of Waterproofing Membrane<br/>At end of Sub-Clause 1 add the following:<br/>The Company shall provide with all batches of material delivered to the</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |          |               |          |          |                                                                |          |                                                                |              |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |        |         |  |     |     |     |     |     |  |                                 |  |    |     |     |    |  |

**Appendix 0/2: Minor Alterations to Existing Clauses, Tables and Figures Specific to This Agreement**

| Clause Number | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | <p>Site a Certificate of Compliance with the Specification and Annex A.</p> <p>The Company shall provide 2 No free film samples, sprayed on to open moulds (at least 200 millimetres x 200 millimetres in area and minimum thickness two millimetres), for tensile strength, elongation at break to BS ISO 37:2011 and tear strength to BS ISO 34: Part 1: 2010, Method C. The Company shall supply the Contracting Authority with copies of the test results with the samples.</p> <p>A membrane can be applied to the surface of concrete slabs between 14 to 17 days after casting provided no water was added to the surface of the concrete during cure.</p> <p>The Company shall continuously monitor the coverage rate of the material applied to the deck and shall provide the Contracting Authority with sheets on a daily basis showing the start / finish weights and area covered for each period of spray operation.</p> <p>The Company shall continuously monitor the wet film thickness using a gauge pin or a standard comb type thickness gauge. The Company shall provide the Contracting Authority with sheets on a daily basis indicating the wet film thickness measured and location.</p> <p>The Company shall measure the adhesion of the fully cured membrane to the deck using Elcometer Adhesion Tester Model 106 or similar. Three tests shall be required per 500 square metres of sprayed membrane. The Company shall provide the Contracting Authority with the test values and location of test before these areas are covered. The Company shall reinstate the test areas including primer if necessary. Test values below 0.7 newton / square millimetre shall require spraying operations to be suspended while further investigation is undertaken. The Company shall at his own expense remove and respray areas that do not meet this figure.</p> <p>The finished waterproof membrane surface shall be 'Holiday Tested' or tested by an equivalent method approved in writing by the Overseeing Organisation and any imperfections detected shall be rectified by the Company at his own expense. The Company shall make allowance in his programme of Works for such testing.</p> <p><b>High Voltage Pinhole / Holiday Detection for Bridge Deck Membranes Equipment</b></p> <p>Pinhole detection shall be carried out using suitable equipment and the results made available to the Contracting Authority. The equipment shall have the following facilities:</p> <ul style="list-style-type: none"> <li>(a) variable DC test voltage (1 - 20 kilovolts DC);</li> <li>(b) audible and visual alarm signals;</li> <li>(c) sensitivity adjustment;</li> <li>(d) phosphor bronze or silicon rubber electrode;</li> <li>(e) earth lead connection with clip; and</li> </ul> |

**Appendix 0/2: Minor Alterations to Existing Clauses, Tables and Figures Specific to This Agreement**

| Clause Number                    | Title and Written Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                     |                                  |                |                                  |                |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|---------------------|----------------------------------|----------------|----------------------------------|----------------|
|                                  | <p>(f) test voltage.</p> <p>The output voltage of the pinhole detector shall be adjusted in accordance with the following table.</p> <table border="0"> <thead> <tr> <th style="text-align: left;"><b>COATING THICKNESS</b></th> <th style="text-align: left;"><b>TEST VOLTAGE</b></th> </tr> </thead> <tbody> <tr> <td>2 millimetres to 2.5 millimetres</td> <td>12.5 kilovolts</td> </tr> <tr> <td>2.5 millimetres to 3 millimetres</td> <td>13.5 kilovolts</td> </tr> </tbody> </table> <p>The coating thickness is the maximum expected not the average.</p> <p><b>Procedure</b></p> <p>(a) Identify a site on the bridge deck to which the earth lead connection from the pinhole detector can be fixed, i.e. a metal object imbedded in the bridge deck.</p> <p>(b) Connect the leads from the pinhole detector in accordance with the manufacturer’s written instructions.</p> <p>(c) Fix the earth lead from the pinhole detector to the substrate and ensure that a good electrical contact is made.</p> <p>(d) Adjust the pinhole detector to the required test voltage in accordance with Sub-Clause (a) above.</p> <p>(e) With the pinhole detector turned OFF, connect any extension rods that may be required to the test probe handle. Connect the electrode to the end of the extension rods if fitted. A damaged electrode that does not make 100 per cent contact along its length shall not be used.</p> <p>(f) To check the pinhole detector is working correctly, touch the electrode onto the exposed substrate. The pinhole detectors alarm signal should be activated. If not, check the lead connections to the equipment and the earth lead to the substrate, also it may be necessary to adjust the sensitivity control on the equipment.</p> <p>(g) Pass the electrode over the coated surface at a maximum rate of 100 millimetres / second, paying particular attention to edges, holes and visible irregularities in the coating. The test voltage will have to be reduced if testing edges as the coating will be thin.</p> <p>(h) When a fault has been identified by the detector, the electrode shall be moved sideways in order to identify its precise location. Subsequently the fault should be ringed with a suitable marker. Such markings shall be made sufficiently distant from the coating defect to allow the repair procedure to be carried out without detriment to the adhesion of the repair material.</p> <p>(i) Continue testing and marking defects until all the coating has been tested, changing the electrode size as necessary.</p> <p>All repaired areas shall be re-tested.</p> | <b>COATING THICKNESS</b> | <b>TEST VOLTAGE</b> | 2 millimetres to 2.5 millimetres | 12.5 kilovolts | 2.5 millimetres to 3 millimetres | 13.5 kilovolts |
| <b>COATING THICKNESS</b>         | <b>TEST VOLTAGE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                          |                     |                                  |                |                                  |                |
| 2 millimetres to 2.5 millimetres | 12.5 kilovolts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                          |                     |                                  |                |                                  |                |
| 2.5 millimetres to 3 millimetres | 13.5 kilovolts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                          |                     |                                  |                |                                  |                |

**Appendix 0/2: Minor Alterations to Existing Clauses, Tables and Figures Specific to This Agreement**

| <b>Clause Number</b> | <b>Title and Written Text</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>2606</b>          | <p><b>1 Cored Thermoplastic Node Markers</b></p> <p>1.1 Sub-Clause 2(i), Line 1:<br/>Delete “10 millimetres ±5 millimetres” and replace with “20 millimetres”</p> <p>1.2 At end of Clause 2606 section 3 add the following:<br/>Notwithstanding any other requirements of this Agreement, record drawings of the chart node locations at a scale of 1:500 shall be provided to the Contracting Authority within seven days of the completion date stated within the Final Completion Certificate for any Phase issued by the Contracting Authority pursuant to Sub Clause 10.1 of the Conditions. The record drawings shall locate the chart nodes as a series of dimensions from carriageway features. The local and national grid co-ordinates of all chart nodes shall be detailed on the record drawings.</p> |
| <b>3009</b>          | <p><b>1 Establishment Maintenance for Planting</b></p> <p>1.1 Delete Sub-Clause 9 and insert:<br/>9. Plant circles shall be defined as the area within 250 millimetre radius of an individual tree or shrub, within which weed control operations are carried out.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



**Appendix 0/2: Minor Alterations to Existing Clauses, Tables and Figures Specific to This Agreement**

**PART B: VOLUME 2 NOTES FOR GUIDANCE ON THE SPECIFICATION FOR HIGHWAY WORKS**

**LIST OF MINOR ALTERATIONS TO EXISTING CLAUSES**

| Clause Number | Alteration to be made | Written on Page Number |
|---------------|-----------------------|------------------------|
| None          |                       |                        |

**MINOR ALTERATIONS TO EXISTING CLAUSES**

| Clause Number | Alteration to be made |
|---------------|-----------------------|
| None          |                       |

## Part 4: Specification

**Appendix 0/3: List of Numbered Appendices Referred to in the Specification and Included in This Agreement****1 Appendix 0/3**

- 1.1 Appendix 0/3 is comprised of two lists, A and B, of numbered Appendices as follows:
- 1.2 List A is a complete list of the numbered Appendices referred to in the Specification with those not adopted marked "Not Used".
- 1.3 The responsibility for compiling/completing the numbered Appendices is indicated by the following symbols:
- E The Contracting Authority compiles
- E/C The Contracting Authority partially compiles and the Company completes and returns to the Contracting Authority.
- C The Company compiles, completes and returns to the Contracting Authority.
- I For Company's information only
- (P) This indicates the Appendix is a national proforma and the format shall not be altered.
- T The Participant compiles, completes and returns with Tender.
- 1.4 The Company shall compile/complete the numbered Appendices in accordance with the Notes for Guidance on the Specification for Highway Works (Volume 2 of the MCHW), and provide as a minimum the information described in the sample appendices.
- 1.5 List B is not used.

**List A**

| <b>Compiled/<br/>Completed<br/>by</b> | <b>Appendix<br/>Number</b> | <b>Title</b>                                                                                        |
|---------------------------------------|----------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Introduction</b>                   |                            |                                                                                                     |
| E                                     | 0/1                        | Additional, Substitute and Cancelled Clauses, Tables and Figures specific to this Agreement         |
| E                                     | 0/2                        | Minor Alterations to Existing Clauses, Tables and Figures specific to this Agreement                |
| E                                     | 0/3                        | List of Numbered Appendices Referred to in the Specification and Included in this Agreement         |
| E                                     | 0/4                        | List of Drawings Included in this Agreement                                                         |
| E                                     | 0/5                        | Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland. |
| <b>Preliminaries</b>                  |                            |                                                                                                     |
| E                                     | 1/1                        | Temporary Accommodation and Equipment for the Contracting Authority                                 |
| E                                     | 1/2                        | Vehicles for the Contracting Authority                                                              |
| E                                     | 1/3                        | Communication System for the Contracting Authority                                                  |
| C                                     | 1/4                        | Working and Fabrication Drawings                                                                    |

## Part 4: Specification

**Appendix 0/3: List of Numbered Appendices Referred to in the Specification and Included in This Agreement**

| Compiled/<br>Completed<br>by | Appendix<br>Number | Title                                                                                                                                  |
|------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| E/C                          | 1/5                | Testing to be Carried out by the Company                                                                                               |
| E                            | 1/6                | Supply and Delivery of Samples to the Contracting Authority                                                                            |
| E                            | 1/7                | Site Extent and Limitations on Use                                                                                                     |
| E                            | 1/8                | Operatives for the Contracting Authority                                                                                               |
| E                            | 1/9                | Control of Noise and Vibration                                                                                                         |
| Not Used                     | 1/10               | Structures to be Designed by the Company                                                                                               |
| Not Used                     | 1/11               | Structural Elements and Other Features to be Designed by the Company                                                                   |
| E                            | 1/12               | Setting Out and Existing Ground Levels                                                                                                 |
| E/C                          | 1/13               | Programme of New Works                                                                                                                 |
| Not Used                     | 1/14               | Monthly Statements                                                                                                                     |
| E                            | 1/15               | Accommodation Works                                                                                                                    |
| E/C                          | 1/16               | Privately and Publicly Owned Services and Supplies                                                                                     |
| E/C                          | 1/17               | Traffic Safety and Management                                                                                                          |
| E                            | 1/18               | Temporary Diversion for Traffic                                                                                                        |
| E                            | 1/19               | Routeing of Vehicles                                                                                                                   |
| E                            | 1/20               | Recovery Vehicles for Breakdowns                                                                                                       |
| E                            | 1/21               | Information Boards                                                                                                                     |
| E                            | 1/22               | Progress Photographs                                                                                                                   |
| E/C                          | 1/23               | Substances Hazardous to Health                                                                                                         |
| E/C                          | 1/24               | Quality Management System                                                                                                              |
| C                            | 1/25               | Temporary Closed Circuit Television (CCTV) System for the Monitoring of Traffic                                                        |
| E/C                          | 1/26               | Temporary Automatic Speed Camera System for the Enforcement of Mandatory Speed Limits at Road Works (TASCAR)                           |
| E/C                          | 1/27               | Temporary Automatic Speed Camera System for the Enforcement of Mandatory Speed Limits at Road Works (TASCAR) – Particular Requirements |
| <b>Site Clearance</b>        |                    |                                                                                                                                        |
| E/C                          | 2/1                | List of Buildings, etc. to be Demolished                                                                                               |
| C                            | 2/2                | Filling of Trenches and Pipes                                                                                                          |
| C                            | 2/3                | Retention of Material Arising from Site Clearance                                                                                      |
| E/C                          | 2/4                | Explosives and Blasting                                                                                                                |

## Part 4: Specification

**Appendix 0/3: List of Numbered Appendices Referred to in the Specification and Included in This Agreement**

| Compiled/<br>Completed<br>by                           | Appendix<br>Number | Title                                                                                                                          |
|--------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------|
| E/C                                                    | 2/5                | Hazardous Materials                                                                                                            |
| <b>Fencing and Environmental Barriers</b>              |                    |                                                                                                                                |
| C                                                      | 3/1                | Fencing, Gates and Stiles                                                                                                      |
| C                                                      | 3/70               | Environmental Barriers                                                                                                         |
| <b>Road Restraint Systems (Vehicle and Pedestrian)</b> |                    |                                                                                                                                |
| C                                                      | 4/1                | Road Restraint Systems (Vehicle and Pedestrian)                                                                                |
| E/C                                                    | 4/2                | Information Required to Demonstrate Compliance of Road Restraint Systems to BS EN 1317-1, BS EN 1317-3 and DD ENV 1317-4: 2002 |
| <b>Drainage and Service Ducts</b>                      |                    |                                                                                                                                |
| C                                                      | 5/1                | Drainage Requirements                                                                                                          |
| C                                                      | 5/2                | Service Duct Requirements                                                                                                      |
| C                                                      | 5/3                | Surface Water Channels and Drainage Channel Blocks                                                                             |
| C                                                      | 5/4                | Fin Drains and Narrow Filter Drains                                                                                            |
| C                                                      | 5/5                | Combined Drainage and Kerb Systems                                                                                             |
| C                                                      | 5/6                | Linear Drainage Channel Systems                                                                                                |
| C                                                      | 5/7                | Thermoplastics Structural Wall Pipes and Fittings                                                                              |
| <b>Earthworks</b>                                      |                    |                                                                                                                                |
| C                                                      | 6/1                | Requirements for Acceptability and Testing etc. of Earthworks Materials                                                        |
| C                                                      | 6/2                | Requirements for Dealing with Class U1B and Class U2 Unacceptable Material                                                     |
| C                                                      | 6/3                | Requirements for Excavation, Deposition, Compaction (Other than Dynamic Compaction)                                            |
| C                                                      | 6/4                | Requirements for Class 3 Material                                                                                              |
| C                                                      | 6/5                | Geotextiles Used to Separate Earthworks Materials                                                                              |
| C                                                      | 6/6                | Fill to Structures and Fill Above Structural Foundations                                                                       |
| C                                                      | 6/7                | Sub-formation and Capping and Preparation and Surface Treatment of Formation                                                   |
| C                                                      | 6/8                | Topsoiling                                                                                                                     |
| C                                                      | 6/9                | Earthworks Environmental Bunds, Landscape Areas, Strengthened Embankments                                                      |
| E/C                                                    | 6/10               | Ground Anchorages, Crib Walling and Gabions                                                                                    |

## Part 4: Specification

**Appendix 0/3: List of Numbered Appendices Referred to in the Specification and Included in This Agreement**

| Compiled/<br>Completed<br>by    | Appendix<br>Number | Title                                                                                                                             |
|---------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| E/C                             | 6/11               | Swallow Holes and Other Naturally Occurring Cavities and Disused Mine Workings                                                    |
| E/C                             | 6/12               | Instrumentation and Monitoring                                                                                                    |
| C                               | 6/13               | Ground Improvement                                                                                                                |
| C                               | 6/14               | Limiting Values for Pollution of Controlled Waters                                                                                |
| C                               | 6/15               | Limiting Values for Harm to Human Health and the Environment                                                                      |
| <b>Road Pavements - General</b> |                    |                                                                                                                                   |
| T/C                             | 7/1                | Permitted Pavement Options                                                                                                        |
| C                               | 7/2                | Excavation, Trimming and Reinstatement of Existing Surfaces                                                                       |
| C                               | 7/3                | Surface Dressing – Performance Specification                                                                                      |
| C                               | 7/4                | Bond Coats, Tack Coats and Other Bituminous Sprays                                                                                |
| C                               | 7/5                | In Situ Recycling: The Remix and Repave Processes                                                                                 |
| C                               | 7/6                | Breaking Up or Perforation of Existing Pavement                                                                                   |
| C                               | 7/7                | Slurry Surfacing Incorporating Microsurfacing                                                                                     |
| C                               | 7/8                | Not Used                                                                                                                          |
| C                               | 7/9                | Not Used                                                                                                                          |
| C                               | 7/10               | Worksheet Pro Forma for Results of Testing for Constituent Materials in Recycled Coarse Aggregate and Recycled Concrete Aggregate |
| C                               | 7/11               | Overbanding and Inlaid Crack Sealing Systems                                                                                      |
| C                               | 7/12               | Arrester Beds                                                                                                                     |
| C                               | 7/13               | Saw-Cut and Seal Bituminous Overlays on Existing Jointed Concrete Pavements                                                       |
| C                               | 7/14               | Preparation of Jointed Concrete Pavements Prior to Overlaying and Saw-Cut and Seal of the Bituminous Overlay                      |
| C                               | 7/15               | Not Used                                                                                                                          |
| C                               | 7/16               | Cracking and Sealing of Existing Jointed Unreinforced Concrete Pavements and CBM Bases                                            |
| C                               | 7/17               | Cracking Plant and Equipment Progress Record                                                                                      |
| C                               | 7/18               | Site Specific Details and Requirements for Cold Recycled Bitumen Bound Material                                                   |
| C                               | 7/19               | Site Specific Details and Requirements for Recycled Cement Bound Material                                                         |
| C                               | 7/20               | Site Specific Details and Requirements for Inducing Cracks                                                                        |

## Part 4: Specification

**Appendix 0/3: List of Numbered Appendices Referred to in the Specification and Included in This Agreement**

| <b>Compiled/<br/>Completed<br/>by</b>                       | <b>Appendix<br/>Number</b> | <b>Title</b>                                                                   |
|-------------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------|
| C                                                           | 7/21                       | Surface Dressing – Recipe Specification                                        |
| C                                                           | 7/22                       | Repair to Potholes                                                             |
| <b>Road Pavements – Concrete and Cement Bound Materials</b> |                            |                                                                                |
| C                                                           | 10/1                       | Plant and Equipment for the Construction of Exposed Aggregate Concrete Surface |
| <b>Kerbs, Footways and Paved Areas</b>                      |                            |                                                                                |
| C                                                           | 11/1                       | Kerbs, Footways and Paved Areas                                                |
| C                                                           | 11/2                       | Access Steps                                                                   |
| <b>Traffic Signs</b>                                        |                            |                                                                                |
| E/C                                                         | 12/1                       | Traffic Signs: General                                                         |
| E/C                                                         | 12/2                       | Traffic Signs: Marker Posts                                                    |
| E/C                                                         | 12/3                       | Traffic Signs: Road Markings and Studs                                         |
| C                                                           | 12/4                       | Traffic Signs: Cones, Cylinders, FTDs and Other Traffic Delineators            |
| E/C                                                         | 12/5                       | Traffic Signs: Traffic Signals                                                 |
| C                                                           | 12/6                       | Traffic Signs: Special Sign Requirements on Gantries                           |
| <b>Road Lighting Columns and Brackets</b>                   |                            |                                                                                |
| C                                                           | 13/1                       | <b>Typical Lighting Column and Bracket Datasheet 1</b>                         |
| C/P                                                         | 13/2                       | <b>Typical Lighting Column and Bracket Datasheet 2</b>                         |
| C/P                                                         | 13/3                       | Instructions for Completion of Column and Bracket Data Sheets                  |
| C                                                           | 13/4                       | Information to be Provided When Specifying CCTV Masts                          |
| C                                                           | 13/5                       | (Specification for Highway Works) Typical CCTV Mast Data Sheet                 |
| C/P                                                         | 13/6                       | Instructions for Completion of CCTV Mast Sheets                                |
| C                                                           | 13/7                       | Information to be Provided When Specifying Cantilever Masts                    |
| C/P                                                         | 13/8                       | (Specification for Highway Works) Typical Cantilever Masts Data Sheets 1 and 2 |
| C/P                                                         | 13/9                       | Instructions for Completion of Cantilever Masts Data Sheets                    |
| <b>Electrical Work for Road Lighting and Traffic Signs</b>  |                            |                                                                                |
| C                                                           | 14/1                       | Site Records                                                                   |
| C                                                           | 14/2                       | Location of Lighting Units & Feeder Pillars                                    |
| C                                                           | 14/3                       | Temporary Lighting                                                             |

## Part 4: Specification

**Appendix 0/3: List of Numbered Appendices Referred to in the Specification and Included in This Agreement**

| <b>Compiled/<br/>Completed<br/>by</b>      | <b>Appendix<br/>Number</b> | <b>Title</b>                                                                                                      |
|--------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------|
| C                                          | 14/4                       | Electrical Equipment for Road Lighting                                                                            |
| C                                          | 14/5                       | Electrical Equipment for Traffic Signs                                                                            |
| <b>Motorway Communications</b>             |                            |                                                                                                                   |
| C                                          | 15/1                       | Motorway Communications                                                                                           |
| C                                          | 15/2                       | Cable Duct Requirements                                                                                           |
| <b>Piling and Embedded Retaining Walls</b> |                            |                                                                                                                   |
| C                                          | 16/1                       | General Requirements for Piling and Embedded Retaining Walls                                                      |
| C                                          | 16/2                       | Precast Reinforced and Pre-stressed Concrete Piles and Precast Reinforced Concrete Segmental Piles                |
| C                                          | 16/3                       | Bored Cast in Place Piles                                                                                         |
| C                                          | 16/4                       | Bored Piles Constructed Using Continuous Flight Augers and Concrete or Grout Injection Through Hollow Auger Stems |
| C                                          | 16/5                       | Driven Cast-in-Place Piles                                                                                        |
| C                                          | 16/6                       | Steel Bearing Piles                                                                                               |
| C                                          | 16/7                       | Reduction of Friction on Piles                                                                                    |
| C                                          | 16/8                       | Non-Destructive Methods for Testing Piles                                                                         |
| C                                          | 16/9                       | Static Load Testing of Piles                                                                                      |
| C                                          | 16/10                      | Diaphragm Walls                                                                                                   |
| C                                          | 16/11                      | Hard/Hard Secant Pile Walls                                                                                       |
| C                                          | 16/12                      | Hard/Soft Secant Pile Walls                                                                                       |
| C                                          | 16/13                      | Contiguous Bored Pile Walls                                                                                       |
| C                                          | 16/14                      | King Post Walls                                                                                                   |
| C                                          | 16/15                      | Steel Sheet Piles                                                                                                 |
| C                                          | 16/16                      | Integrity Testing of Wall Elements                                                                                |
| C                                          | 16/17                      | Instrumentation for Piles and Embedded Walls                                                                      |
| C                                          | 16/18                      | Support Fluid                                                                                                     |
| <b>Structural Concrete</b>                 |                            |                                                                                                                   |
| C                                          | 17/1                       | Concrete - Classification of Mixes                                                                                |
| C                                          | 17/2                       | Concrete - Impregnation Schedule                                                                                  |
| C                                          | 17/3                       | Concrete - Surface Finishes                                                                                       |
| C                                          | 17/4                       | Concrete - General                                                                                                |
| C                                          | 17/5                       | Buried Concrete                                                                                                   |

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**Appendix 0/3: List of Numbered Appendices Referred to in the Specification and Included in This Agreement**

| Compiled/<br>Completed<br>by                       | Appendix<br>Number | Title                                                                                          |
|----------------------------------------------------|--------------------|------------------------------------------------------------------------------------------------|
| C                                                  | 17/6               | Grouting and Duct Systems for Post-Tensioned Tendons                                           |
| <b>Structural Steelwork</b>                        |                    |                                                                                                |
| C                                                  | 18/1               | Requirements for Structural Steelwork                                                          |
| <b>Protection of Steelwork Against Corrosion</b>   |                    |                                                                                                |
| C                                                  | 19/1               | (Specification for Highway Works) Form HA/P1 Paint System Sheet                                |
| C                                                  | 19/2               | (Specification for Highway Works) Requirements for Other Works                                 |
| C                                                  | 19/3               | (Specification for Highway Works) Form HA/P2 Paint Data Sheet                                  |
| C                                                  | 19/4               | (Specification for Highway Works) Form SEDD/P3 Paint Sample Despatch List, Sheets 1 and 2      |
| C                                                  | 19/5               | General Requirements                                                                           |
| <b>Waterproofing for Structures</b>                |                    |                                                                                                |
| C                                                  | 20/1               | Waterproofing for Concrete Structures                                                          |
| <b>Bridge Bearings</b>                             |                    |                                                                                                |
| C                                                  | 21/1               | Bridge Bearing Schedule                                                                        |
| <b>Bridge Expansion Joints and Sealing of Gaps</b> |                    |                                                                                                |
| C                                                  | 23/1               | Bridge Deck Expansion Joint Schedule                                                           |
| C                                                  | 23/2               | Sealing of Gaps Schedule (Other than in Bridge Deck Expansion Joints)                          |
| <b>Brickwork, Blockwork and Stonework</b>          |                    |                                                                                                |
| C                                                  | 24/1               | Brickwork, Blockwork and Stonework                                                             |
| <b>Special Structures</b>                          |                    |                                                                                                |
| C                                                  | 25/1               | Requirements for Corrugated Steel Buried Structures                                            |
| C                                                  | 25/2               | Requirements for Reinforced Soil and Anchored Earth Structures                                 |
| C                                                  | 25/3               | Requirements for Pocket-Type and Grouted-Cavity Reinforced Brickwork Retaining Wall Structures |
| C                                                  | 25/4               | Environmental Barriers                                                                         |
| C                                                  | 25/5               | Requirements for Buried Rigid Pipes for Drainage Structures                                    |
| <b>Miscellaneous</b>                               |                    |                                                                                                |
| C                                                  | 26/1               | Ancillary Concrete                                                                             |
| C                                                  | 26/2               | Bedding Mortar                                                                                 |



## Part 4: Specification

**Appendix 0/3: List of Numbered Appendices Referred to in the Specification and Included in This Agreement**

| <b>Compiled/<br/>Completed<br/>by</b>    | <b>Appendix<br/>Number</b> | <b>Title</b>                                                                   |
|------------------------------------------|----------------------------|--------------------------------------------------------------------------------|
| C                                        | 26/3                       | Cored Thermoplastic Node Markers                                               |
| <b>Landscape and Ecology</b>             |                            |                                                                                |
| E/C                                      | 30/1                       | General                                                                        |
| E                                        | 30/2                       | Weed Control                                                                   |
| E                                        | 30/3                       | Control of Rabbits and Deer                                                    |
| E                                        | 30/4                       | Ground Preparation                                                             |
| E                                        | 30/5                       | Grass Seeding, Wildflower Seeding and Turfing                                  |
| E                                        | 30/6                       | Planting Sheets 1 and 2                                                        |
| E/C                                      | 30/7                       | Grass, Bulbs and Wildflower Maintenance                                        |
| E                                        | 30/8                       | Watering                                                                       |
| E                                        | 30/9                       | Establishment Maintenance for Planting                                         |
| E                                        | 30/10                      | Maintenance of Established Trees and Shrubs                                    |
| E                                        | 30/11                      | Management of Waterbodies                                                      |
| E                                        | 30/12                      | Special Ecological Measures                                                    |
| <b>Maintenance Painting of Steelwork</b> |                            |                                                                                |
| C                                        | 50/1                       | (Specification for Highway Works) Form (HA/P1 (Maintenance) Paint System Sheet |
| C                                        | 50/2                       | Requirements for Other Work                                                    |
| C                                        | 50/3                       | (Specification for Highway Works) Form HA/P2 Paint Data Sheet                  |
| C                                        | 50/4SE                     | Form SEDD/P3 Paint Sample Despatch List                                        |
| C                                        | 50/5                       | General Requirements                                                           |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| Drawing Number   | Title                                                                                                                             |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>Orders</b>    |                                                                                                                                   |
| Key Plan         | A90 (Aberdeen Western Peripheral Route) Special Roads Scheme 2010                                                                 |
| Plan SP1         | A90 (Aberdeen Western Peripheral Route) Special Roads Scheme 2010                                                                 |
| Plan SP2         | A90 (Aberdeen Western Peripheral Route) Special Roads Scheme 2010                                                                 |
| Plan SP3         | A90 (Aberdeen Western Peripheral Route) Special Roads Scheme 2010                                                                 |
| Plan SP4         | A90 (Aberdeen Western Peripheral Route) Special Roads Scheme 2010                                                                 |
| Plan SP5         | A90 (Aberdeen Western Peripheral Route) Special Roads Scheme 2010                                                                 |
| RYC/G109/13/0702 | A956 (Aberdeen Western Peripheral Route) Special Roads Scheme 2010                                                                |
| RYC/G109/13/0703 | A90 (Aberdeen Western Peripheral Route) (Craibstone Junction) Special Roads Scheme 2010                                           |
| Key Plan         | A90 (Aberdeen Western Peripheral Route) Trunk Road Order 2010                                                                     |
| Plan TR1         | A90 (Aberdeen Western Peripheral Route) Trunk Road Order 2010                                                                     |
| Plan TR2         | A90 (Aberdeen Western Peripheral Route) Trunk Road Order 2010                                                                     |
| Plan TR3         | A90 (Aberdeen Western Peripheral Route) Trunk Road Order 2010                                                                     |
| RYC/G109/13/0713 | A956 (Aberdeen Western Peripheral Route) Trunk Road Order 2010                                                                    |
| RYC/G109/13/0712 | A96 (Aberdeen Western Peripheral Route) Trunk Road Order 2010                                                                     |
| Key Plan         | A90 (Aberdeen Western Peripheral Route) Special Road (Redetermination of Means of Exercise of Public Right of Passage) Order 2010 |
| Key Plan         | A90 (Aberdeen Western Peripheral Route) Special Road (Redetermination of Means of Exercise of Public Right of Passage) Order 2010 |
| Plan RD1         | A90 (Aberdeen Western Peripheral Route) Special Road (Redetermination of Means of Exercise of Public Right of Passage) Order 2010 |
| Plan RD2         | A90 (Aberdeen Western Peripheral Route) Special Road (Redetermination of Means of Exercise of Public Right of Passage) Order 2010 |
| Key Plan         | A90 Trunk Road (Charleston to Blackdog) Detrunking Order 2010                                                                     |
| Plan DT1         | A90 Trunk Road (Charleston to Blackdog) Detrunking Order 2010                                                                     |
| Plan DT2         | A90 Trunk Road (Charleston to Blackdog) Detrunking Order 2010                                                                     |
| Plan DT3         | A90 Trunk Road (Charleston to Blackdog) Detrunking Order 2010                                                                     |
| Plan DT4         | A90 Trunk Road (Charleston to Blackdog) Detrunking Order 2010                                                                     |
| RYC/G109/13/0723 | A96 Trunk Road (Dyce Drive Roundabout to Craibstone) Detrunking Order 2010                                                        |
| RYC/G109/13/0722 | A96 Trunk Road (Dyce Drive to Haudagain Roundabout) Detrunking Order 2010                                                         |
| Key Plan         | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010                                                  |
| Key Plan         | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010                                                  |
| Key Plan         | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010                                                  |
| Key Plan         | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010                                                  |
| Plan SR1         | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010                                                  |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b> | <b>Title</b>                                                                     |
|-----------------------|----------------------------------------------------------------------------------|
| Plan SR2              | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR3              | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR4              | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR5              | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR6              | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR7              | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR8              | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR9              | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR10             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR11             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR12             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR13             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR14             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR15             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR16             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR17             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR18             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR19             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR20             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR21             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR22             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR23             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR24             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR25             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |

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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b> | <b>Title</b>                                                                      |
|-----------------------|-----------------------------------------------------------------------------------|
| Plan SR26             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010  |
| Plan SR27             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010  |
| Plan SR28             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010  |
| Plan SR29             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010  |
| Plan SR30             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010  |
| Plan SR31             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010  |
| Plan SR32             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010  |
| Plan SR33             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010  |
| Plan SR34             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010  |
| Plan SR35             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010  |
| Plan SR36             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010  |
| Plan SR37             | The A90 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010  |
| Key Plan              | The A90 (Aberdeen Western Peripheral Route) Trunk Road (Side Roads) Order 2010    |
| Plan SR1              | The A90 (Aberdeen Western Peripheral Route) Trunk Road (Side Roads) Order 2010    |
| Plan SR2              | The A90 (Aberdeen Western Peripheral Route) Trunk Road (Side Roads) Order 2010    |
| Plan SR3              | The A90 (Aberdeen Western Peripheral Route) Trunk Road (Side Roads) Order 2010    |
| Plan SR4              | The A90 (Aberdeen Western Peripheral Route) Trunk Road (Side Roads) Order 2010    |
| Key Plan              | The A956 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR1              | The A956 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR2              | The A956 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR3              | The A956 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR4              | The A956 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR5              | The A956 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |
| Plan SR6              | The A956 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010 |

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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>                    | <b>Title</b>                                                                                                 |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Plan SR7                                 | The A956 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010                            |
| Plan SR8                                 | The A956 (Aberdeen Western Peripheral Route) Special Road (Side Roads) Order 2010                            |
| Key Plan                                 | The A956 (Aberdeen Western Peripheral Route) Trunk Road (Side Roads) Order 2010                              |
| Plan SR1                                 | The A956 (Aberdeen Western Peripheral Route) Trunk Road (Side Roads) Order 2010                              |
| Plan SR2                                 | The A956 (Aberdeen Western Peripheral Route) Trunk Road (Side Roads) Order 2010                              |
| Key Plan                                 | The A96 (Aberdeen Western Peripheral Route) Trunk Road (Side Roads) Order 2010                               |
| Plan SR1                                 | The A96 (Aberdeen Western Peripheral Route) Trunk Road (Side Roads) Order 2010                               |
| Plan SR2                                 | The A96 (Aberdeen Western Peripheral Route) Trunk Road (Side Roads) Order 2010                               |
| Key Plan                                 | The A90 (Aberdeen Western Peripheral Route) Special Road (Extinguishment of Public Rights of Way) Order 2010 |
| Key Plan                                 | The A90 (Aberdeen Western Peripheral Route) Special Road (Extinguishment of Public Rights of Way) Order 2010 |
| Key Plan                                 | The A90 (Aberdeen Western Peripheral Route) Special Road (Extinguishment of Public Rights of Way) Order 2010 |
| Plan ROW1                                | The A90 (Aberdeen Western Peripheral Route) Special Road (Extinguishment of Public Rights of Way) Order 2010 |
| Plan ROW2                                | The A90 (Aberdeen Western Peripheral Route) Special Road (Extinguishment of Public Rights of Way) Order 2010 |
| Plan ROW3                                | The A90 (Aberdeen Western Peripheral Route) Special Road (Extinguishment of Public Rights of Way) Order 2010 |
| Plan ROW4                                | The A90 (Aberdeen Western Peripheral Route) Special Road (Extinguishment of Public Rights of Way) Order 2010 |
| Plan ROW5                                | The A90 (Aberdeen Western Peripheral Route) Special Road (Extinguishment of Public Rights of Way) Order 2010 |
| Plan ROW6                                | The A90 (Aberdeen Western Peripheral Route) Special Road (Extinguishment of Public Rights of Way) Order 2010 |
| Plan ROW7                                | The A90 (Aberdeen Western Peripheral Route) Special Road (Extinguishment of Public Rights of Way) Order 2010 |
| Plan ROW8                                | The A90 (Aberdeen Western Peripheral Route) Special Road (Extinguishment of Public Rights of Way) Order 2010 |
| Plan ROW9                                | The A90 (Aberdeen Western Peripheral Route) Special Road (Extinguishment of Public Rights of Way) Order 2010 |
| Balmedie to Tippetty Plan No. RYC/G110/1 | The M9/A90/M90 Trunk Road (Balmedie to Tippetty) (Trunking and Detrunking) Order 2012 Plan No. RYC/G110/1    |
| Balmedie to Tippetty Legend              | The M9/A90/M90 Trunk Road (Balmedie to Tippetty) (Trunking and Detrunking) Order 2012 Legend                 |
| Balmedie to Tippetty Keyplan             | The M9/A90/M90 Trunk Road (Balmedie to Tippetty) (Side Roads) Order 2012 Keyplan                             |
| Balmedie to Tippetty Plan No. SR01       | The M9/A90/M90 Trunk Road (Balmedie to Tippetty) (Side Roads) Order 2012 Plan No. SR01                       |

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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>              | <b>Title</b>                                                                                              |
|------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Balmedie to Tipperty Plan No. SR02 | The M9/A90/M90 Trunk Road (Balmedie to Tipperty) (Side Roads) Order 2012 Plan No. SR02                    |
| Balmedie to Tipperty Plan No. SR03 | The M9/A90/M90 Trunk Road (Balmedie to Tipperty) (Side Roads) Order 2012 Plan No. SR03                    |
| Balmedie to Tipperty Plan No. SR04 | The M9/A90/M90 Trunk Road (Balmedie to Tipperty) (Side Roads) Order 2012 Plan No. SR04                    |
| Balmedie to Tipperty Plan No. SR05 | The M9/A90/M90 Trunk Road (Balmedie to Tipperty) (Side Roads) Order 2012 Plan No. SR05                    |
| Balmedie to Tipperty Plan No. SR06 | The M9/A90/M90 Trunk Road (Balmedie to Tipperty) (Side Roads) Order 2012 Plan No. SR06                    |
| Balmedie to Tipperty Plan No. SR07 | The M9/A90/M90 Trunk Road (Balmedie to Tipperty) (Side Roads) Order 2012 Plan No. SR07                    |
| Balmedie to Tipperty Plan No. SR08 | The M9/A90/M90 Trunk Road (Balmedie to Tipperty) (Side Roads) Order 2012 Plan No. SR08                    |
| Balmedie to Tipperty Plan No. SR09 | The M9/A90/M90 Trunk Road (Balmedie to Tipperty) (Side Roads) Order 2012 Plan No. SR09                    |
| Balmedie to Tipperty Plan No. SR10 | The M9/A90/M90 Trunk Road (Balmedie to Tipperty) (Side Roads) Order 2012 Plan No. SR10                    |
| Balmedie to Tipperty Plan No. SR11 | The M9/A90/M90 Trunk Road (Balmedie to Tipperty) (Side Roads) Order 2012 Plan No. SR11                    |
| Balmedie to Tipperty Plan No. SR12 | The M9/A90/M90 Trunk Road (Balmedie to Tipperty) (Side Roads) Order 2012 Plan No. SR12                    |
| Balmedie to Tipperty Legend        | The M9/A90/M90 Trunk Road (Balmedie to Tipperty) (Side Roads) Order 2012 Legend                           |
| Balmedie to Tipperty Keyplan       | The M9/A90/M90 Trunk Road (Balmedie to Tipperty) (Prohibition of Specified Turns) Order 2012 Keyplan      |
| Balmedie to Tipperty Plan No, PO1  | The M9/A90/M90 Trunk Road (Balmedie to Tipperty) (Prohibition of Specified Turns) Order 2012 Plan No, PO1 |
| Balmedie to Tipperty Plan No, PO2  | The M9/A90/M90 Trunk Road (Balmedie to Tipperty) (Prohibition of Specified Turns) Order 2012 Plan No, PO2 |
| Balmedie to Tipperty Plan No, PO3  | The M9/A90/M90 Trunk Road (Balmedie to Tipperty) (Prohibition of Specified Turns) Order 2012 Plan No, PO3 |
| Balmedie to Tipperty Legend        | The M9/A90/M90 Trunk Road (Balmedie to Tipperty) (Prohibition of Specified Turns) Order 2012 Legend       |
| Balmedie to Tipperty Keyplan       | The M9/A90/M90 Trunk Road (Easter Hatton Link) (Prohibition of Specified Turns) Order 2012 Keyplan        |
| Balmedie to Tipperty Plan No. PO1  | The M9/A90/M90 Trunk Road (Easter Hatton Link) (Prohibition of Specified Turns) Order 2012 Plan No. PO1   |
| Balmedie to Tipperty Legend        | The M9/A90/M90 Trunk Road (Easter Hatton Link) (Prohibition of Specified Turns) Order 2012 Legend         |
| Balmedie to Tipperty Keyplan       | The M9/A90/M90 Trunk Road (Easter Hatton Link) (Stopping up of Accesses) Order 2012 Keyplan               |
| Balmedie to Tipperty Plan No. SU01 | The M9/A90/M90 Trunk Road (Easter Hatton Link) (Stopping up of Accesses) Order 2012 Plan No. SU01         |
| Balmedie to Tipperty Legend        | The M9/A90/M90 Trunk Road (Easter Hatton Link) (Stopping up of Accesses) Order 2012 Legend                |
| <b>Notices</b>                     |                                                                                                           |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b> | <b>Title</b>                                                                                                                                                             |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RYC/G109/36/01        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/02        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/03        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/04        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/05        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/06        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/07        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/08        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/09        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/10        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/11        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/12        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/12A       | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/13        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/14        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/15        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/16        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b> | <b>Title</b>                                                                                                                                                             |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RYC/G109/36/17        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/18        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/19        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/20        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/21        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/22        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/23        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/23B       | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/24        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/24A       | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/24B       | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/25        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/26        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/27        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/28        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/29        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/30        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |



## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b> | <b>Title</b>                                                                                                                                                             |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RYC/G109/36/31        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/32        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/32B       | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/33        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/33A       | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/34        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/34A       | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/35        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/36        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/37        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/38        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/39        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/40        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/41        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/41A       | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/42        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/43        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b> | <b>Title</b>                                                                                                                                                             |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RYC/G109/36/44        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/45        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/46        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/47        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/48        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/49        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/50        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/51        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/52        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/53        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/54        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/55        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/56        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/57        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/58        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| RYC/G109/36/59        | The A90 (Aberdeen Western Peripheral Route) Special Road and The A956 (Aberdeen Western Peripheral Route) Special Road Scheme 2010 Notice of Works in Relation to Waters |
| Plans WC01-20         | The M9/A90/M90 Trunk Road (Balmedie to Tippetty) Notice of Works in Relation to Waters Plans WC01-20 0                                                                   |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| Drawing Number                      | Title                                                                                          |
|-------------------------------------|------------------------------------------------------------------------------------------------|
| <b>Land Made Available Drawings</b> |                                                                                                |
| B1033200/CD/LMA/KP1 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Key Plan       |
| B1033200/CD/LMA/001 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 1 of 71  |
| B1033200/CD/LMA/002 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 2 of 71  |
| B1033200/CD/LMA/003 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 3 of 71  |
| B1033200/CD/LMA/004 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 4 of 71  |
| B1033200/CD/LMA/005 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 5 of 71  |
| B1033200/CD/LMA/006 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 6 of 71  |
| B1033200/CD/LMA/007 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 7 of 71  |
| B1033200/CD/LMA/008 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 8 of 71  |
| B1033200/CD/LMA/009 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 9 of 71  |
| B1033200/CD/LMA/010 Rev 2           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 10 of 71 |
| B1033200/CD/LMA/011 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 11 of 71 |
| B1033200/CD/LMA/012 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 12 of 71 |
| B1033200/CD/LMA/013 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 13 of 71 |
| B1033200/CD/LMA/014 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 14 of 71 |
| B1033200/CD/LMA/015 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 15 of 71 |
| B1033200/CD/LMA/016 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 16 of 71 |
| B1033200/CD/LMA/017 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 17 of 71 |
| B1033200/CD/LMA/018 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 18 of 71 |
| B1033200/CD/LMA/019 Rev 1           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 19 of 71 |
| B1033200/CD/LMA/020 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 20 of 71 |
| B1033200/CD/LMA/021 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 21 of 71 |
| B1033200/CD/LMA/022 Rev 0           | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 22 of 71 |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>     | <b>Title</b>                                                                                   |
|---------------------------|------------------------------------------------------------------------------------------------|
| B1033200/CD/LMA/023 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 23 of 71 |
| B1033200/CD/LMA/024 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 24 of 71 |
| B1033200/CD/LMA/025 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 25 of 71 |
| B1033200/CD/LMA/026 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 26 of 71 |
| B1033200/CD/LMA/027 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 27 of 71 |
| B1033200/CD/LMA/028 Rev 1 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 28 of 71 |
| B1033200/CD/LMA/029 Rev 1 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 29 of 71 |
| B1033200/CD/LMA/030 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 30 of 71 |
| B1033200/CD/LMA/031 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 31 of 71 |
| B1033200/CD/LMA/032 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 32 of 71 |
| B1033200/CD/LMA/033 Rev 1 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 33 of 71 |
| B1033200/CD/LMA/034 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 34 of 71 |
| B1033200/CD/LMA/035 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 35 of 71 |
| B1033200/CD/LMA/036 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 36 of 71 |
| B1033200/CD/LMA/037 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 37 of 71 |
| B1033200/CD/LMA/038 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 38 of 71 |
| B1033200/CD/LMA/039 Rev 1 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 39 of 71 |
| B1033200/CD/LMA/040 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 40 of 71 |
| B1033200/CD/LMA/041 Rev 1 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 41 of 71 |
| B1033200/CD/LMA/042 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 42 of 71 |
| B1033200/CD/LMA/043 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 43 of 71 |
| B1033200/CD/LMA/044 Rev 1 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 44 of 71 |
| B1033200/CD/LMA/045 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 45 of 71 |
| B1033200/CD/LMA/046 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 46 of 71 |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>     | <b>Title</b>                                                                                   |
|---------------------------|------------------------------------------------------------------------------------------------|
| B1033200/CD/LMA/047 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 47 of 71 |
| B1033200/CD/LMA/048 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 48 of 71 |
| B1033200/CD/LMA/049 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 49 of 71 |
| B1033200/CD/LMA/050 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 50 of 71 |
| B1033200/CD/LMA/051 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 51 of 71 |
| B1033200/CD/LMA/052 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 52 of 71 |
| B1033200/CD/LMA/053 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 53 of 71 |
| B1033200/CD/LMA/054 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 54 of 71 |
| B1033200/CD/LMA/055 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 55 of 71 |
| B1033200/CD/LMA/056 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 56 of 71 |
| B1033200/CD/LMA/057 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 57 of 71 |
| B1033200/CD/LMA/058 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 58 of 71 |
| B1033200/CD/LMA/059 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 59 of 71 |
| B1033200/CD/LMA/060 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 60 of 71 |
| B1033200/CD/LMA/061 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 61 of 71 |
| B1033200/CD/LMA/062 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 62 of 71 |
| B1033200/CD/LMA/063 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 63 of 71 |
| B1033200/CD/LMA/064 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 64 of 71 |
| B1033200/CD/LMA/065 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 65 of 71 |
| B1033200/CD/LMA/066 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 66 of 71 |
| B1033200/CD/LMA/067 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 67 of 71 |
| B1033200/CD/LMA/068 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 68 of 71 |
| B1033200/CD/LMA/069 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 69 of 71 |
| B1033200/CD/LMA/070 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 70 of 71 |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>     | <b>Title</b>                                                                                   |
|---------------------------|------------------------------------------------------------------------------------------------|
| B1033200/CD/LMA/071 Rev 0 | Aberdeen Western Peripheral Route Land Made Available by the Scottish Ministers Sheet 71 of 71 |
| P246600/GENE/2/0001 Rev A | A90 Balmedie to Tippetty LMA FOR THE NEW WORKS SHEET 1 OF 19                                   |
| P246600/GENE/2/0002 Rev B | A90 Balmedie to Tippetty LMA FOR THE NEW WORKS SHEET 2 OF 19                                   |
| P246600/GENE/2/0003 Rev A | A90 Balmedie to Tippetty LMA FOR THE NEW WORKS SHEET 3 OF 19                                   |
| P246600/GENE/2/0004 Rev 0 | A90 Balmedie to Tippetty LMA FOR THE NEW WORKS SHEET 4 OF 19                                   |
| P246600/GENE/2/0005 Rev 0 | A90 Balmedie to Tippetty LMA FOR THE NEW WORKS SHEET 5 OF 19                                   |
| P246600/GENE/2/0006 Rev 0 | A90 Balmedie to Tippetty LMA FOR THE NEW WORKS SHEET 6 OF 19                                   |
| P246600/GENE/2/0007 Rev A | A90 Balmedie to Tippetty LMA FOR THE NEW WORKS SHEET 7 OF 19                                   |
| P246600/GENE/2/0008 Rev 0 | A90 Balmedie to Tippetty LMA FOR THE NEW WORKS SHEET 8 OF 19                                   |
| P246600/GENE/2/0009 Rev 0 | A90 Balmedie to Tippetty LMA FOR THE NEW WORKS SHEET 9 OF 19                                   |
| P246600/GENE/2/0010 Rev 0 | A90 Balmedie to Tippetty LMA FOR THE NEW WORKS SHEET 10 OF 19                                  |
| P246600/GENE/2/0011 Rev 0 | A90 Balmedie to Tippetty LMA FOR THE NEW WORKS SHEET 11 OF 19                                  |
| P246600/GENE/2/0012 Rev 0 | A90 Balmedie to Tippetty LMA FOR THE NEW WORKS SHEET 12 OF 19                                  |
| P246600/GENE/2/0013 Rev 0 | A90 Balmedie to Tippetty LMA FOR THE NEW WORKS SHEET 13 OF 19                                  |
| P246600/GENE/2/0014 Rev A | A90 Balmedie to Tippetty LMA FOR THE NEW WORKS SHEET 14 OF 19                                  |
| P246600/GENE/2/0015 Rev 0 | A90 Balmedie to Tippetty LMA FOR THE NEW WORKS SHEET 15 OF 19                                  |
| P246600/GENE/2/0016 Rev 0 | A90 Balmedie to Tippetty LMA FOR THE NEW WORKS SHEET 16 OF 19                                  |
| P246600/GENE/2/0017 Rev 0 | A90 Balmedie to Tippetty LMA FOR THE NEW WORKS SHEET 17 OF 19                                  |
| P246600/GENE/2/0018 Rev 0 | A90 Balmedie to Tippetty LMA FOR THE NEW WORKS SHEET 18 OF 19                                  |
| P246600/GENE/2/0019 Rev A | A90 Balmedie to Tippetty LMA FOR THE NEW WORKS SHEET 19 OF 19                                  |
| <b>Reference Drawings</b> |                                                                                                |
| B1033200/CD/REF/KP1 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Key Plan                                   |
| B1033200/CD/REF/001 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 1 of 71                              |
| B1033200/CD/REF/002 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 2 of 71                              |
| B1033200/CD/REF/003 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 3 of 71                              |
| B1033200/CD/REF/004 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 4 of 71                              |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>     | <b>Title</b>                                                       |
|---------------------------|--------------------------------------------------------------------|
| B1033200/CD/REF/005 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 5 of 71  |
| B1033200/CD/REF/006 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 6 of 71  |
| B1033200/CD/REF/007 Rev 1 | Aberdeen Western Peripheral Route Reference Drawing Sheet 7 of 71  |
| B1033200/CD/REF/008 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 8 of 71  |
| B1033200/CD/REF/009 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 9 of 71  |
| B1033200/CD/REF/010 Rev 2 | Aberdeen Western Peripheral Route Reference Drawing Sheet 10 of 71 |
| B1033200/CD/REF/011 Rev 1 | Aberdeen Western Peripheral Route Reference Drawing Sheet 11 of 71 |
| B1033200/CD/REF/012 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 12 of 71 |
| B1033200/CD/REF/013 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 13 of 71 |
| B1033200/CD/REF/014 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 14 of 71 |
| B1033200/CD/REF/015 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 15 of 71 |
| B1033200/CD/REF/016 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 16 of 71 |
| B1033200/CD/REF/017 Rev 1 | Aberdeen Western Peripheral Route Reference Drawing Sheet 17 of 71 |
| B1033200/CD/REF/018 Rev 1 | Aberdeen Western Peripheral Route Reference Drawing Sheet 18 of 71 |
| B1033200/CD/REF/019 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 19 of 71 |
| B1033200/CD/REF/020 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 20 of 71 |
| B1033200/CD/REF/021 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 21 of 71 |
| B1033200/CD/REF/022 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 22 of 71 |
| B1033200/CD/REF/023 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 23 of 71 |
| B1033200/CD/REF/024 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 24 of 71 |
| B1033200/CD/REF/025 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 25 of 71 |
| B1033200/CD/REF/026 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 26 of 71 |
| B1033200/CD/REF/027 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 27 of 71 |
| B1033200/CD/REF/028 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 28 of 71 |
| B1033200/CD/REF/029 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 29 of 71 |
| B1033200/CD/REF/030 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 30 of 71 |
| B1033200/CD/REF/031 Rev 1 | Aberdeen Western Peripheral Route Reference Drawing Sheet 31 of 71 |

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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>      | <b>Title</b>                                                        |
|----------------------------|---------------------------------------------------------------------|
| B1033200/CD/REF/032 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 32 of 71  |
| B1033200/CD/REF/033 Rev 1  | Aberdeen Western Peripheral Route Reference Drawing Sheet 33 of 71  |
| B1033200/CD/REF/034 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 34 of 71  |
| B1033200/CD/REF/035 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 35 of 71  |
| B1033200/CD/REF/036 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 36 of 71  |
| B1033200/CD/REF/037 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 37 of 71  |
| B1033200/CD/REF/038 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 38 of 71  |
| B1033200/CD/REF/039 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 39 of 71  |
| B1033200/CD/REF/040 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 40 of 71  |
| B1033200/CD/REF/041 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 41 of 71  |
| B1033200/CD/REF/042 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 42 of 71  |
| B1033200/CD/REF/043 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 43 of 71  |
| B1033200/CD/REF/044 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 44 of 71  |
| B1033200/CD/REF/045 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 45 of 71  |
| B1033200/CD/REF/046 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 46 of 71  |
| B1033200/CD/REF/047 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 47 of 71  |
| B1033200/CD/REF/048 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 48 of 71  |
| B1033200/CD/REF/049 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 49 of 71  |
| B1033200/CD/REF/050 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 50 of 71  |
| B1033200/CD/REF/051 Rev 1  | Aberdeen Western Peripheral Route Reference Drawing Sheet 51 of 71  |
| B1033200/CD/REF/052 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 52 of 71  |
| B1033200/CD/REF/053 Rev 1  | Aberdeen Western Peripheral Route Reference Drawing Sheet 53 of 71  |
| B1033200/CD/REF/053a Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 53a of 71 |
| B1033200/CD/REF/053b Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 53b of 71 |
| B1033200/CD/REF/054 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 54 of 71  |
| B1033200/CD/REF/055 Rev 1  | Aberdeen Western Peripheral Route Reference Drawing Sheet 55 of 71  |
| B1033200/CD/REF/056 Rev 0  | Aberdeen Western Peripheral Route Reference Drawing Sheet 56 of 71  |



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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>     | <b>Title</b>                                                       |
|---------------------------|--------------------------------------------------------------------|
| B1033200/CD/REF/057 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 57 of 71 |
| B1033200/CD/REF/058 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 58 of 71 |
| B1033200/CD/REF/059 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 59 of 71 |
| B1033200/CD/REF/060 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 60 of 71 |
| B1033200/CD/REF/061 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 61 of 71 |
| B1033200/CD/REF/062 Rev 1 | Aberdeen Western Peripheral Route Reference Drawing Sheet 62 of 71 |
| B1033200/CD/REF/063 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 63 of 71 |
| B1033200/CD/REF/064 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 64 of 71 |
| B1033200/CD/REF/065 Rev 1 | Aberdeen Western Peripheral Route Reference Drawing Sheet 65 of 71 |
| B1033200/CD/REF/066 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 66 of 71 |
| B1033200/CD/REF/067 Rev 1 | Aberdeen Western Peripheral Route Reference Drawing Sheet 67 of 71 |
| B1033200/CD/REF/068 Rev 1 | Aberdeen Western Peripheral Route Reference Drawing Sheet 68 of 71 |
| B1033200/CD/REF/069 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 69 of 71 |
| B1033200/CD/REF/070 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 70 of 71 |
| B1033200/CD/REF/071 Rev 0 | Aberdeen Western Peripheral Route Reference Drawing Sheet 71 of 71 |
| P246600/GENE/2/0121 Rev A | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 1 OF 22   |
| P246600/GENE/2/0122 Rev B | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 2 OF 22   |
| P246600/GENE/2/0123 Rev B | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 3 OF 22   |
| P246600/GENE/2/0124 Rev B | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 4 OF 22   |
| P246600/GENE/2/0125 Rev A | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 5 OF 22   |
| P246600/GENE/2/0126 Rev A | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 6 OF 22   |
| P246600/GENE/2/0127 Rev B | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 7 OF 22   |
| P246600/GENE/2/0128 Rev B | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 8 OF 22   |
| P246600/GENE/2/0129 Rev B | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 9 OF 22   |
| P246600/GENE/2/0130 Rev A | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 10 OF 22  |
| P246600/GENE/2/0131 Rev B | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 11 OF 22  |
| P246600/GENE/2/0132 Rev A | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 12 OF 22  |

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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>                   | <b>Title</b>                                                                                            |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------|
| P246600/GENE/2/0133 Rev A               | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 13 OF 22                                       |
| P246600/GENE/2/0134 Rev B               | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 14 OF 22                                       |
| P246600/GENE/2/0135 Rev A               | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 15 OF 22                                       |
| P246600/GENE/2/0136 Rev B               | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 16 OF 22                                       |
| P246600/GENE/2/0137 Rev A               | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 17 OF 22                                       |
| P246600/GENE/2/0138 Rev A               | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 18 OF 22                                       |
| P246600/GENE/2/0139 Rev A               | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 19 OF 22                                       |
| P246600/GENE/2/0140 Rev B               | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 20 OF 22                                       |
| P246600/GENE/2/0141 Rev A               | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 21 OF 22                                       |
| P246600/GENE/2/0142 Rev A               | A90 Balmedie to Tippetty CONTRACT REFERENCE POINTS SHEET 22 OF 22                                       |
| <b>Reference Drawings - Structures</b>  |                                                                                                         |
| B1033200/CD/REF/ST/001 Rev 0            | Aberdeen Western Peripheral Route Southern Leg and Fastlink Structures Location Plan                    |
| B1033200/CD/REF/ST/002 Rev 1            | Aberdeen Western Peripheral Route Southern Leg and Fastlink Culverts and Mammal Underpass Location Plan |
| B1033200/CD/REF/ST/003 Rev 0            | Aberdeen Western Peripheral Route Northern Leg Structures Location Plan                                 |
| B1033200/CD/REF/ST/004 Rev 0            | Aberdeen Western Peripheral Route Northern Leg Culverts and Mammal Underpass Location Plan              |
| <b>Definition Drawings - Structures</b> |                                                                                                         |
| B1033200/CD/DEF/ST/001 Rev 0            | Overbridges Acceptable Forms Sheet 1 of 2                                                               |
| B1033200/CD/DEF/ST/002 Rev 1            | Overbridges Acceptable Forms Sheet 2 of 2                                                               |
| B1033200/CD/DEF/ST/003 Rev 1            | Concrete Patterned Profile Finishes                                                                     |
| B1033200/CD/DEF/ST/004 Rev 0            | Overbridge Stone Masonry Apron                                                                          |
| B1033200/CD/DEF/ST/005 Rev 1            | Wildlife Overbridge Plan Arrangements and Landscaping                                                   |
| B1033200/CD/DEF/ST/006 Rev 0            | PS15 – River Dee Crossing Sheet 1 of 3                                                                  |
| B1033200/CD/DEF/ST/007 Rev 2            | PS15 – River Dee Crossing Sheet 2 of 3                                                                  |
| B1033200/CD/DEF/ST/008 Rev 1            | PS15 – River Dee Crossing Sheet 3 of 3                                                                  |
| B1033200/CD/DEF/ST/009 Rev 0            | PS16 – Details                                                                                          |
| B1033200/CD/DEF/ST/010 Rev 0            | Bridge Parapets of Concrete Construction                                                                |

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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>                       | <b>Title</b>                                                                          |
|---------------------------------------------|---------------------------------------------------------------------------------------|
| B1033200/CD/DEF/ST/011 Rev 0                | PS46 – River Don Crossing Five Span Option Sheet 1 of 4                               |
| B1033200/CD/DEF/ST/012 Rev 0                | PS46 – River Don Crossing Five Span Option Sheet 2 of 4                               |
| B1033200/CD/DEF/ST/013 Rev 0                | PS46 – River Don Crossing Five Span Option Sheet 3 of 4                               |
| B1033200/CD/DEF/ST/014 Rev 1                | PS46 – River Don Crossing Five Span Option Sheet 4 of 4                               |
| B1033200/CD/DEF/ST/015 Rev 0                | PS46 – River Don Crossing Three Span Option Sheet 1 of 3                              |
| B1033200/CD/DEF/ST/016 Rev 2                | PS46 – River Don Crossing Three Span Option Sheet 2 of 3                              |
| B1033200/CD/DEF/ST/017 Rev 1                | PS46 – River Don Crossing Three Span Option Sheet 3 of 3                              |
| B1033200/CD/DEF/ST/018 Rev 0                | PS49 – Parkhill Aqueduct                                                              |
| B1033200/CD/DEF/ST/019 Rev 0                | PS52 – Plan Layout of Stone Masonry Walls                                             |
| B1033200/CD/DEF/ST/020 Rev 0                | PS55 – Plan Layout of Stone Masonry Walls                                             |
| B1033200/CD/DEF/ST/021 Rev 1                | PS15 – River Dee Crossing Alternative Pier Option 1                                   |
| B1033200/CD/DEF/ST/022 Rev 2                | PS15 – River Dee Crossing Alternative Pier Option 2                                   |
| B1033200/CD/DEF/ST/023 Rev 1                | PS46 – River Don Crossing 3 Span Option Alternative Pier Option 1                     |
| B1033200/CD/DEF/ST/024 Rev 2                | PS46 – River Don Crossing 3 Span Option Alternative Pier Option 2                     |
| B1033200/CD/DEF/ST/025 Rev 0                | PS15 – River Dee Crossing Alternative Abutment Option                                 |
| B1033200/CD/DEF/ST/026 Rev 0                | PS46 – River Don Crossing 5 Span Option Alternative Abutment Option                   |
| B1033200/CD/DEF/ST/027 Rev 0                | PS46 – River Don Crossing 3 Span Option Alternative Abutment Option                   |
| <b>Utilities – Known Existing Apparatus</b> |                                                                                       |
| B1033200/CD/2700/LG01 Rev 1                 | Aberdeen Western Peripheral Route Public & Private Undertakers Legend                 |
| B1033200/CD/2700/KP1 Rev 0                  | Aberdeen Western Peripheral Route Public & Private Undertakers Key Plan               |
| B1033200/CD/2700/EX/001 Rev 1               | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 1 of 71 |
| B1033200/CD/2700/EX/002 Rev 1               | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 2 of 71 |
| B1033200/CD/2700/EX/003 Rev 1               | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 3 of 71 |
| B1033200/CD/2700/EX/004 Rev 1               | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 4 of 71 |
| B1033200/CD/2700/EX/005 Rev 1               | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 5 of 71 |
| B1033200/CD/2700/EX/006 Rev 1               | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 6 of 71 |

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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>         | <b>Title</b>                                                                           |
|-------------------------------|----------------------------------------------------------------------------------------|
| B1033200/CD/2700/EX/007 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 7 of 71  |
| B1033200/CD/2700/EX/008 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 8 of 71  |
| B1033200/CD/2700/EX/009 Rev 2 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 9 of 71  |
| B1033200/CD/2700/EX/010 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 10 of 71 |
| B1033200/CD/2700/EX/011 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 11 of 71 |
| B1033200/CD/2700/EX/012 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 12 of 71 |
| B1033200/CD/2700/EX/013 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 13 of 71 |
| B1033200/CD/2700/EX/014 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 14 of 71 |
| B1033200/CD/2700/EX/015 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 15 of 71 |
| B1033200/CD/2700/EX/016 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 16 of 71 |
| B1033200/CD/2700/EX/017 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 17 of 71 |
| B1033200/CD/2700/EX/018 Rev 2 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 18 of 71 |
| B1033200/CD/2700/EX/019 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 19 of 71 |
| B1033200/CD/2700/EX/020 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 20 of 71 |
| B1033200/CD/2700/EX/021 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 21 of 71 |
| B1033200/CD/2700/EX/022 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 22 of 71 |
| B1033200/CD/2700/EX/023 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 23 of 71 |
| B1033200/CD/2700/EX/024 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 24 of 71 |
| B1033200/CD/2700/EX/025 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 25 of 71 |
| B1033200/CD/2700/EX/026 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 26 of 71 |
| B1033200/CD/2700/EX/027 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 27 of 71 |
| B1033200/CD/2700/EX/028 Rev 2 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 28 of 71 |
| B1033200/CD/2700/EX/029 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 29 of 71 |
| B1033200/CD/2700/EX/030 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 30 of 71 |

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**Appendix 0/4: List of Drawings for the New Works**

| Drawing Number                | Title                                                                                  |
|-------------------------------|----------------------------------------------------------------------------------------|
| B1033200/CD/2700/EX/031 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 31 of 71 |
| B1033200/CD/2700/EX/032 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 32 of 71 |
| B1033200/CD/2700/EX/033 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 33 of 71 |
| B1033200/CD/2700/EX/034 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 34 of 71 |
| B1033200/CD/2700/EX/035 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 35 of 71 |
| B1033200/CD/2700/EX/036 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 36 of 71 |
| B1033200/CD/2700/EX/037 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 37 of 71 |
| B1033200/CD/2700/EX/038 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 38 of 71 |
| B1033200/CD/2700/EX/039 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 39 of 71 |
| B1033200/CD/2700/EX/040 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 40 of 71 |
| B1033200/CD/2700/EX/041 Rev 2 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 41 of 71 |
| B1033200/CD/2700/EX/042 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 42 of 71 |
| B1033200/CD/2700/EX/043 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 43 of 71 |
| B1033200/CD/2700/EX/044 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 44 of 71 |
| B1033200/CD/2700/EX/045 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 45 of 71 |
| B1033200/CD/2700/EX/046 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 46 of 71 |
| B1033200/CD/2700/EX/047 Rev 2 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 47 of 71 |
| B1033200/CD/2700/EX/048 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 48 of 71 |
| B1033200/CD/2700/EX/049 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 49 of 71 |
| B1033200/CD/2700/EX/050 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 50 of 71 |
| B1033200/CD/2700/EX/051 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 51 of 71 |
| B1033200/CD/2700/EX/052 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 52 of 71 |
| B1033200/CD/2700/EX/053 Rev 2 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 53 of 71 |
| B1033200/CD/2700/EX/054 Rev 2 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 54 of 71 |

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**Appendix 0/4: List of Drawings for the New Works**

| Drawing Number                | Title                                                                                  |
|-------------------------------|----------------------------------------------------------------------------------------|
| B1033200/CD/2700/EX/055 Rev 2 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 55 of 71 |
| B1033200/CD/2700/EX/056 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 56 of 71 |
| B1033200/CD/2700/EX/057 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 57 of 71 |
| B1033200/CD/2700/EX/058 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 58 of 71 |
| B1033200/CD/2700/EX/059 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 59 of 71 |
| B1033200/CD/2700/EX/060 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 60 of 71 |
| B1033200/CD/2700/EX/061 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 61 of 71 |
| B1033200/CD/2700/EX/062 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 62 of 71 |
| B1033200/CD/2700/EX/063 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 63 of 71 |
| B1033200/CD/2700/EX/064 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 64 of 71 |
| B1033200/CD/2700/EX/065 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 65 of 71 |
| B1033200/CD/2700/EX/066 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 66 of 71 |
| B1033200/CD/2700/EX/067 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 67 of 71 |
| B1033200/CD/2700/EX/068 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 68 of 71 |
| B1033200/CD/2700/EX/069 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 69 of 71 |
| B1033200/CD/2700/EX/070 Rev 1 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 70 of 71 |
| B1033200/CD/2700/EX/071 Rev 2 | Aberdeen Western Peripheral Route Existing Public & Private Undertakers Sheet 71 of 71 |
| P246600/2700/LG01 Rev 0       | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS LEGEND                |
| P246600/2700/EX/001 Rev A     | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS - SHEET 1 OF 19       |
| P246600/2700/EX/002 Rev A     | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS - SHEET 2 OF 19       |
| P246600/2700/EX/003 Rev A     | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS - SHEET 3 OF 19       |
| P246600/2700/EX/004 Rev A     | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS - SHEET 4 OF 19       |
| P246600/2700/EX/005 Rev A     | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS - SHEET 5 OF 19       |
| P246600/2700/EX/006 Rev A     | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS - SHEET 6 OF 19       |

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**Appendix 0/4: List of Drawings for the New Works**

| Drawing Number                  | Title                                                                             |
|---------------------------------|-----------------------------------------------------------------------------------|
| P246600/2700/EX/007 Rev A       | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS - SHEET 7 OF 19  |
| P246600/2700/EX/008 Rev A       | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS - SHEET 8 OF 19  |
| P246600/2700/EX/009 Rev A       | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS - SHEET 9 OF 19  |
| P246600/2700/EX/010 Rev A       | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS - SHEET 10 OF 19 |
| P246600/2700/EX/011 Rev A       | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS - SHEET 11 OF 19 |
| P246600/2700/EX/012 Rev A       | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS - SHEET 12 OF 19 |
| P246600/2700/EX/013 Rev A       | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS - SHEET 13 OF 19 |
| P246600/2700/EX/014 Rev A       | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS - SHEET 14 OF 19 |
| P246600/2700/EX/015 Rev A       | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS - SHEET 15 OF 19 |
| P246600/2700/EX/016 Rev A       | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS - SHEET 16 OF 19 |
| P246600/2700/EX/017 Rev A       | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS - SHEET 17 OF 19 |
| P246600/2700/EX/018 Rev A       | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS - SHEET 18 OF 19 |
| P246600/2700/EX/019 Rev A       | A90 Balmedie to Tippetty EXISTING PUBLIC AND PRIVATE UNDERTAKERS - SHEET 19 OF 19 |
| <b>[REDACTED]</b>               |                                                                                   |
|                                 |                                                                                   |
|                                 |                                                                                   |
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|                                 |                                                                                   |
|                                 |                                                                                   |
| <b>Utilities – BT Openreach</b> |                                                                                   |
| B1033200/CD/2700/BT/001 Rev 0   | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 1 of 71    |
| B1033200/CD/2700/BT/003 Rev 0   | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 3 of 71    |
| B1033200/CD/2700/BT/004 Rev 0   | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 4 of 71    |

**[REDACTED]**

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>         | <b>Title</b>                                                                    |
|-------------------------------|---------------------------------------------------------------------------------|
| B1033200/CD/2700/BT/005 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 5 of 71  |
| B1033200/CD/2700/BT/007 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 7 of 71  |
| B1033200/CD/2700/BT/009 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 9 of 71  |
| B1033200/CD/2700/BT/010 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 10 of 71 |
| B1033200/CD/2700/BT/011 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 11 of 71 |
| B1033200/CD/2700/BT/012 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 12 of 71 |
| B1033200/CD/2700/BT/014 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 14 of 71 |
| B1033200/CD/2700/BT/015 Rev 1 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 15 of 71 |
| B1033200/CD/2700/BT/017 Rev 1 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 17 of 71 |
| B1033200/CD/2700/BT/018 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 18 of 71 |
| B1033200/CD/2700/BT/019 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 19 of 71 |
| B1033200/CD/2700/BT/020 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 20 of 71 |
| B1033200/CD/2700/BT/021 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 21 of 71 |
| B1033200/CD/2700/BT/022 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 22 of 71 |
| B1033200/CD/2700/BT/024 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 24 of 71 |
| B1033200/CD/2700/BT/025 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 25 of 71 |
| B1033200/CD/2700/BT/026 Rev 1 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 26 of 71 |
| B1033200/CD/2700/BT/027 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 27 of 71 |
| B1033200/CD/2700/BT/028 Rev 1 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 28 of 71 |
| B1033200/CD/2700/BT/029 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 29 of 71 |
| B1033200/CD/2700/BT/030 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 30 of 71 |
| B1033200/CD/2700/BT/031 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 31 of 71 |
| B1033200/CD/2700/BT/032 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 32 of 71 |
| B1033200/CD/2700/BT/033 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 33 of 71 |



## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>         | <b>Title</b>                                                                    |
|-------------------------------|---------------------------------------------------------------------------------|
| B1033200/CD/2700/BT/034 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 34 of 71 |
| B1033200/CD/2700/BT/037 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 37 of 71 |
|                               |                                                                                 |
| B1033200/CD/2700/BT/040 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 40 of 71 |
|                               |                                                                                 |
| B1033200/CD/2700/BT/042 Rev 2 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 42 of 71 |
| B1033200/CD/2700/BT/043 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 43 of 71 |
| B1033200/CD/2700/BT/044 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 44 of 71 |
| B1033200/CD/2700/BT/045 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 45 of 71 |
| B1033200/CD/2700/BT/046 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 46 of 71 |
| B1033200/CD/2700/BT/047 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 47 of 71 |
|                               |                                                                                 |
| B1033200/CD/2700/BT/049 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 49 of 71 |
|                               |                                                                                 |
| B1033200/CD/2700/BT/051 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 51 of 71 |
| B1033200/CD/2700/BT/052 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 52 of 71 |
| B1033200/CD/2700/BT/053 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 53 of 71 |
| B1033200/CD/2700/BT/054 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 54 of 71 |
| B1033200/CD/2700/BT/055 Rev 1 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 55 of 71 |
| B1033200/CD/2700/BT/058 Rev 1 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 58 of 71 |
| B1033200/CD/2700/BT/059 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 59 of 71 |
| B1033200/CD/2700/BT/060 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 60 of 71 |
| B1033200/CD/2700/BT/061 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 61 of 71 |
|                               |                                                                                 |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>         | <b>Title</b>                                                                    |
|-------------------------------|---------------------------------------------------------------------------------|
|                               |                                                                                 |
| B1033200/CD/2700/BT/065 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 65 of 71 |
| B1033200/CD/2700/BT/066 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 66 of 71 |
|                               |                                                                                 |
| B1033200/CD/2700/BT/068 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 68 of 71 |
| B1033200/CD/2700/BT/069 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 69 of 71 |
| B1033200/CD/2700/BT/070 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 70 of 71 |
| B1033200/CD/2700/BT/071 Rev 0 | Aberdeen Western Peripheral Route Indicative Design BT Openreach Sheet 71 of 71 |
| P246600/2700/BT/001 Rev A     | Indicative Design BT Openreach Sheet 1 of 19                                    |
| P246600/2700/BT/002 Rev A     | Indicative Design BT Openreach Sheet 2 of 19                                    |
| P246600/2700/BT/003 Rev A     | Indicative Design BT Openreach Sheet 3 of 19                                    |
| P246600/2700/BT/004 Rev B     | Indicative Design BT Openreach Sheet 4 of 19                                    |
| P246600/2700/BT/005 Rev 0     | Indicative Design BT Openreach Sheet 5 of 19                                    |
| P246600/2700/BT/006 Rev A     | Indicative Design BT Openreach Sheet 6 of 19                                    |
| P246600/2700/BT/007 Rev A     | Indicative Design BT Openreach Sheet 7 of 19                                    |
| P246600/2700/BT/008 Rev 0     | Indicative Design BT Openreach Sheet 8 of 19                                    |
| P246600/2700/BT/009 Rev 0     | Indicative Design BT Openreach Sheet 9 of 19                                    |
| P246600/2700/BT/010 Rev 0     | Indicative Design BT Openreach Sheet 10 of 19                                   |
| P246600/2700/BT/011 Rev 0     | Indicative Design BT Openreach Sheet 11 of 19                                   |
| P246600/2700/BT/012 Rev 0     | Indicative Design BT Openreach Sheet 12 of 19                                   |
| P246600/2700/BT/013 Rev 0     | Indicative Design BT Openreach Sheet 13 of 19                                   |
| P246600/2700/BT/014 Rev A     | Indicative Design BT Openreach Sheet 14 of 19                                   |
| P246600/2700/BT/015 Rev 0     | Indicative Design BT Openreach Sheet 15 of 19                                   |
| P246600/2700/BT/016 Rev A     | Indicative Design BT Openreach Sheet 16 of 19                                   |
| P246600/2700/BT/017 Rev 0     | Indicative Design BT Openreach Sheet 17 of 19                                   |
| P246600/2700/BT/018 Rev A     | Indicative Design BT Openreach Sheet 18 of 19                                   |

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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>                 | <b>Title</b>                                                                                             |
|---------------------------------------|----------------------------------------------------------------------------------------------------------|
| P246600/2700/BT/019 Rev A             | Indicative Design BT Openreach Sheet 19 of 19                                                            |
| <b>Utilities – Cable and Wireless</b> |                                                                                                          |
| B1033200/CD/2700/CWW/001 Rev 0        | Aberdeen Western Peripheral Route Indicative Design Cable and Wireless Sheet 1 of 71                     |
| B1033200/CD/2700/CWW/031 Rev 0        | Aberdeen Western Peripheral Route Indicative Design Cable and Wireless Sheet 31 of 71                    |
| B1033200/CD/2700/CWW/033 Rev 0        | Aberdeen Western Peripheral Route Indicative Design Cable and Wireless Sheet 33 of 71                    |
| B1033200/CD/2700/CWW/053 Rev 0        | Aberdeen Western Peripheral Route Indicative Design Cable and Wireless Sheet 53 of 71                    |
| B1033200/CD/2700/CWW/054 Rev 0        | Aberdeen Western Peripheral Route Indicative Design Cable and Wireless Sheet 54 of 71                    |
| B1033200/CD/2700/CWW/055 Rev 1        | Aberdeen Western Peripheral Route Indicative Design Cable and Wireless Sheet 55 of 71                    |
| B1033200/CD/2700/CWW/056 Rev 0        | Aberdeen Western Peripheral Route Indicative Design Cable and Wireless Sheet 56 of 71                    |
| B1033200/CD/2700/CWW/057 Rev 0        | Aberdeen Western Peripheral Route Indicative Design Cable and Wireless Sheet 57 of 71                    |
| B1033200/CD/2700/CWW/065 Rev 0        | Aberdeen Western Peripheral Route Indicative Design Cable and Wireless Sheet 65 of 71                    |
| B1033200/CD/2700/CWW/066 Rev 0        | Aberdeen Western Peripheral Route Indicative Design Cable and Wireless Sheet 66 of 71                    |
| B1033200/CD/2700/CWW/067 Rev 0        | Aberdeen Western Peripheral Route Indicative Design Cable and Wireless Sheet 67 of 71                    |
| B1033200/CD/2700/CWW/068 Rev 0        | Aberdeen Western Peripheral Route Indicative Design Cable and Wireless Sheet 68 of 71                    |
| B1033200/CD/2700/CWW/069 Rev 0        | Aberdeen Western Peripheral Route Indicative Design Cable and Wireless Sheet 69 of 71                    |
| B1033200/CD/2700/CWW/070 Rev 0        | Aberdeen Western Peripheral Route Indicative Design Cable and Wireless Sheet 70 of 71                    |
| B1033200/CD/2700/CWW/071 Rev 1        | Aberdeen Western Peripheral Route Indicative Design Cable and Wireless Sheet 71 of 71                    |
| P246600/2700/CWW/001 Rev B            | A90 Balmedie to Tipperty INDICATIVE DESIGN - CABLE & WIRELESS WORLDWIDE (VODAFONE GROUP) - SHEET 1 OF 19 |
| P246600/2700/CWW/002 Rev B            | A90 Balmedie to Tipperty INDICATIVE DESIGN - CABLE & WIRELESS WORLDWIDE (VODAFONE GROUP) - SHEET 2 OF 19 |
| P246600/2700/CWW/003 Rev B            | A90 Balmedie to Tipperty INDICATIVE DESIGN - CABLE & WIRELESS WORLDWIDE (VODAFONE GROUP) - SHEET 3 OF 19 |
| P246600/2700/CWW/004 Rev B            | A90 Balmedie to Tipperty INDICATIVE DESIGN - CABLE & WIRELESS WORLDWIDE (VODAFONE GROUP) - SHEET 4 OF 19 |
| P246600/2700/CWW/005 Rev B            | A90 Balmedie to Tipperty INDICATIVE DESIGN - CABLE & WIRELESS WORLDWIDE (VODAFONE GROUP) - SHEET 5 OF 19 |
| P246600/2700/CWW/006 Rev B            | A90 Balmedie to Tipperty INDICATIVE DESIGN - CABLE & WIRELESS WORLDWIDE (VODAFONE GROUP) - SHEET 6 OF 19 |
| P246600/2700/CWW/007 Rev B            | A90 Balmedie to Tipperty INDICATIVE DESIGN - CABLE & WIRELESS WORLDWIDE (VODAFONE GROUP) - SHEET 7 OF 19 |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>                    | <b>Title</b>                                                                                              |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| P246600/2700/CWW/008 Rev B               | A90 Balmedie to Tippetty INDICATIVE DESIGN - CABLE & WIRELESS WORLDWIDE (VODAFONE GROUP) - SHEET 8 OF 19  |
| P246600/2700/CWW/009 Rev B               | A90 Balmedie to Tippetty INDICATIVE DESIGN - CABLE & WIRELESS WORLDWIDE (VODAFONE GROUP) - SHEET 9 OF 19  |
| P246600/2700/CWW/010 Rev B               | A90 Balmedie to Tippetty INDICATIVE DESIGN - CABLE & WIRELESS WORLDWIDE (VODAFONE GROUP) - SHEET 10 OF 19 |
| P246600/2700/CWW/011 Rev B               | A90 Balmedie to Tippetty INDICATIVE DESIGN - CABLE & WIRELESS WORLDWIDE (VODAFONE GROUP) - SHEET 11 OF 19 |
| P246600/2700/CWW/012 Rev B               | A90 Balmedie to Tippetty INDICATIVE DESIGN - CABLE & WIRELESS WORLDWIDE (VODAFONE GROUP) - SHEET 12 OF 19 |
| P246600/2700/CWW/013 Rev B               | A90 Balmedie to Tippetty INDICATIVE DESIGN - CABLE & WIRELESS WORLDWIDE (VODAFONE GROUP) - SHEET 13 OF 19 |
| P246600/2700/CWW/014 Rev B               | A90 Balmedie to Tippetty INDICATIVE DESIGN - CABLE & WIRELESS WORLDWIDE (VODAFONE GROUP) - SHEET 14 OF 19 |
| P246600/2700/CWW/015 Rev B               | A90 Balmedie to Tippetty INDICATIVE DESIGN - CABLE & WIRELESS WORLDWIDE (VODAFONE GROUP) - SHEET 15 OF 19 |
| P246600/2700/CWW/016 Rev B               | A90 Balmedie to Tippetty INDICATIVE DESIGN - CABLE & WIRELESS WORLDWIDE (VODAFONE GROUP) - SHEET 16 OF 19 |
| P246600/2700/CWW/017 Rev B               | A90 Balmedie to Tippetty INDICATIVE DESIGN - CABLE & WIRELESS WORLDWIDE (VODAFONE GROUP) - SHEET 17 OF 19 |
| P246600/2700/CWW/018 Rev B               | A90 Balmedie to Tippetty INDICATIVE DESIGN - CABLE & WIRELESS WORLDWIDE (VODAFONE GROUP) - SHEET 18 OF 19 |
| P246600/2700/CWW/019 Rev B               | A90 Balmedie to Tippetty INDICATIVE DESIGN - CABLE & WIRELESS WORLDWIDE (VODAFONE GROUP) - SHEET 19 OF 19 |
| <b>Utilities – Scotland Gas Networks</b> |                                                                                                           |
| B1033200/CD/2700/SGN/001 Rev 0           | Aberdeen Western Peripheral Route Indicative Design Scottish Gas Networks Sheet 1 of 71                   |
| B1033200/CD/2700/SGN/012 Rev 0           | Aberdeen Western Peripheral Route Indicative Design Scottish Gas Networks Sheet 12 of 71                  |
|                                          |                                                                                                           |
| B1033200/CD/2700/SGN/019 Rev 1           | Aberdeen Western Peripheral Route Indicative Design Scottish Gas Networks Sheet 19 of 71                  |
|                                          |                                                                                                           |
| B1033200/CD/2700/SGN/030 Rev 0           | Aberdeen Western Peripheral Route Indicative Design Scottish Gas Networks Sheet 30 of 71                  |
| B1033200/CD/2700/SGN/031 Rev 0           | Aberdeen Western Peripheral Route Indicative Design Scottish Gas Networks Sheet 31 of 71                  |
| B1033200/CD/2700/SGN/032 Rev 0           | Aberdeen Western Peripheral Route Indicative Design Scottish Gas Networks Sheet 32 of 71                  |
| B1033200/CD/2700/SGN/033 Rev 0           | Aberdeen Western Peripheral Route Indicative Design Scottish Gas Networks Sheet 33 of 71                  |
| B1033200/CD/2700/SGN/034 Rev 0           | Aberdeen Western Peripheral Route Indicative Design Scottish Gas Networks Sheet 34 of 71                  |
| B1033200/CD/2700/SGN/053 Rev 0           | Aberdeen Western Peripheral Route Indicative Design Scottish Gas Networks Sheet 53 of 71                  |

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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>          | <b>Title</b>                                                                             |
|--------------------------------|------------------------------------------------------------------------------------------|
| B1033200/CD/2700/SGN/054 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish Gas Networks Sheet 54 of 71 |
| B1033200/CD/2700/SGN/055 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish Gas Networks Sheet 55 of 71 |
| B1033200/CD/2700/SGN/060 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Gas Networks Sheet 60 of 71 |
| B1033200/CD/2700/SGN/063 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Gas Networks Sheet 63 of 71 |
| B1033200/CD/2700/SGN/070 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish Gas Networks Sheet 70 of 71 |
| B1033200/CD/2700/SGN/071 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Gas Networks Sheet 71 of 71 |
| P246600/2700/SGN/001 Rev B     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTLAND GAS NETWORKS - SHEET 1 OF 19       |
| P246600/2700/SGN/002 Rev C     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTLAND GAS NETWORKS - SHEET 2 OF 19       |
| P246600/2700/SGN/003 Rev C     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTLAND GAS NETWORKS - SHEET 3 OF 19       |
| P246600/2700/SGN/004 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTLAND GAS NETWORKS - SHEET 4 OF 19       |
| P246600/2700/SGN/005 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTLAND GAS NETWORKS - SHEET 5 OF 19       |
| P246600/2700/SGN/006 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTLAND GAS NETWORKS - SHEET 6 OF 19       |
| P246600/2700/SGN/007 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTLAND GAS NETWORKS - SHEET 7 OF 19       |
| P246600/2700/SGN/008 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTLAND GAS NETWORKS - SHEET 8 OF 19       |
| P246600/2700/SGN/009 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTLAND GAS NETWORKS - SHEET 9 OF 19       |
| P246600/2700/SGN/010 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTLAND GAS NETWORKS - SHEET 10 OF 19      |
| P246600/2700/SGN/011 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTLAND GAS NETWORKS - SHEET 11 OF 19      |
| P246600/2700/SGN/012 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTLAND GAS NETWORKS - SHEET 12 OF 19      |
| P246600/2700/SGN/013 Rev B     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTLAND GAS NETWORKS - SHEET 13 OF 19      |
| P246600/2700/SGN/014 Rev C     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTLAND GAS NETWORKS - SHEET 14 OF 19      |
| P246600/2700/SGN/015 Rev C     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTLAND GAS NETWORKS - SHEET 15 OF 19      |
| P246600/2700/SGN/016 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTLAND GAS NETWORKS - SHEET 16 OF 19      |
| P246600/2700/SGN/017 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTLAND GAS NETWORKS - SHEET 17 OF 19      |
| P246600/2700/SGN/018 Rev B     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTLAND GAS NETWORKS - SHEET 18 OF 19      |

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**Appendix 0/4: List of Drawings for the New Works**

| Drawing Number                    | Title                                                                               |
|-----------------------------------|-------------------------------------------------------------------------------------|
| P246600/2700/SGN/019 Rev B        | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTLAND GAS NETWORKS - SHEET 19 OF 19 |
| <b>Utilities – Scottish Water</b> |                                                                                     |
| B1033200/CD/2700/SW/001 Rev 1     | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 1 of 71    |
|                                   |                                                                                     |
| B1033200/CD/2700/SW/003 Rev 0     | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 3 of 71    |
| B1033200/CD/2700/SW/005 Rev 0     | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 5 of 71    |
| B1033200/CD/2700/SW/006 Rev 0     | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 6 of 71    |
| B1033200/CD/2700/SW/007 Rev 0     | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 7 of 71    |
|                                   |                                                                                     |
| B1033200/CD/2700/SW/009 Rev 0     | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 9 of 71    |
| B1033200/CD/2700/SW/010 Rev 0     | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 10 of 71   |
| B1033200/CD/2700/SW/012 Rev 0     | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 12 of 71   |
| B1033200/CD/2700/SW/014 Rev 0     | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 14 of 71   |
| B1033200/CD/2700/SW/015 Rev 0     | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 15 of 71   |
| B1033200/CD/2700/SW/016 Rev 0     | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 16 of 71   |
| B1033200/CD/2700/SW/018 Rev 1     | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 18 of 71   |
| B1033200/CD/2700/SW/019 Rev 1     | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 19 of 71   |
| B1033200/CD/2700/SW/020 Rev 2     | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 20 of 71   |
|                                   |                                                                                     |
| B1033200/CD/2700/SW/022 Rev 0     | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 22 of 71   |
| B1033200/CD/2700/SW/023 Rev 0     | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 23 of 71   |
| B1033200/CD/2700/SW/024 Rev 0     | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 24 of 71   |
| B1033200/CD/2700/SW/026 Rev 1     | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 26 of 71   |
| B1033200/CD/2700/SW/027 Rev 1     | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 27 of 71   |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>         | <b>Title</b>                                                                      |
|-------------------------------|-----------------------------------------------------------------------------------|
|                               |                                                                                   |
| B1033200/CD/2700/SW/029 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 29 of 71 |
| B1033200/CD/2700/SW/030 Rev 2 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 30 of 71 |
| B1033200/CD/2700/SW/031 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 31 of 71 |
| B1033200/CD/2700/SW/032 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 32 of 71 |
| B1033200/CD/2700/SW/033 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 33 of 71 |
| B1033200/CD/2700/SW/034 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 34 of 71 |
| B1033200/CD/2700/SW/038 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 38 of 71 |
| B1033200/CD/2700/SW/040 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 40 of 71 |
| B1033200/CD/2700/SW/042 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 42 of 71 |
| B1033200/CD/2700/SW/043 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 43 of 71 |
| B1033200/CD/2700/SW/044 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 44 of 71 |
| B1033200/CD/2700/SW/045 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 45 of 71 |
| B1033200/CD/2700/SW/046 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 46 of 71 |
| B1033200/CD/2700/SW/050 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 50 of 71 |
| B1033200/CD/2700/SW/051 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 51 of 71 |
| B1033200/CD/2700/SW/052 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 52 of 71 |
|                               |                                                                                   |
| B1033200/CD/2700/SW/054 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 54 of 71 |
| B1033200/CD/2700/SW/055 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 55 of 71 |
| B1033200/CD/2700/SW/056 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 56 of 71 |
| B1033200/CD/2700/SW/057 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 57 of 71 |
| B1033200/CD/2700/SW/058 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 58 of 71 |
| B1033200/CD/2700/SW/060 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 60 of 71 |

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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>         | <b>Title</b>                                                                      |
|-------------------------------|-----------------------------------------------------------------------------------|
| B1033200/CD/2700/SW/061 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 61 of 71 |
|                               |                                                                                   |
| B1033200/CD/2700/SW/065 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 65 of 71 |
| B1033200/CD/2700/SW/066 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 66 of 71 |
|                               |                                                                                   |
| B1033200/CD/2700/SW/068 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 68 of 71 |
| B1033200/CD/2700/SW/069 Rev 0 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 69 of 71 |
| B1033200/CD/2700/SW/070 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 70 of 71 |
| B1033200/CD/2700/SW/071 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish Water Sheet 71 of 71 |
| P246600/2700/SW/001 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTTISH WATER - SHEET 1 OF 19       |
| P246600/2700/SW/002 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTTISH WATER - SHEET 2 OF 19       |
| P246600/2700/SW/003 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTTISH WATER - SHEET 3 OF 19       |
| P246600/2700/SW/004 Rev B     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTTISH WATER - SHEET 4 OF 19       |
| P246600/2700/SW/005 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTTISH WATER - SHEET 5 OF 19       |
| P246600/2700/SW/006 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTTISH WATER - SHEET 6 OF 19       |
| P246600/2700/SW/007 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTTISH WATER - SHEET 7 OF 19       |
| P246600/2700/SW/008 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTTISH WATER - SHEET 8 OF 19       |
| P246600/2700/SW/009 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTTISH WATER - SHEET 9 OF 19       |
| P246600/2700/SW/010 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTTISH WATER - SHEET 10 OF 19      |
| P246600/2700/SW/011 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTTISH WATER - SHEET 11 OF 19      |
| P246600/2700/SW/012 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTTISH WATER - SHEET 12 OF 19      |
| P246600/2700/SW/013 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTTISH WATER - SHEET 13 OF 19      |
| P246600/2700/SW/014 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTTISH WATER - SHEET 14 OF 19      |
| P246600/2700/SW/015 Rev A     | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTTISH WATER - SHEET 15 OF 19      |



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**Appendix 0/4: List of Drawings for the New Works**

| Drawing Number                                               | Title                                                                                                        |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| P246600/2700/SW/016 Rev A                                    | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTTISH WATER - SHEET 16 OF 19                                 |
| P246600/2700/SW/017 Rev A                                    | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTTISH WATER - SHEET 17 OF 19                                 |
| P246600/2700/SW/018 Rev A                                    | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTTISH WATER - SHEET 18 OF 19                                 |
| P246600/2700/SW/019 Rev A                                    | A90 Balmedie to Tippetty INDICATIVE DESIGN - SCOTTISH WATER - SHEET 19 OF 19                                 |
| <b>[REDACTED]</b>                                            |                                                                                                              |
| <b>[REDACTED]</b>                                            |                                                                                                              |
|                                                              |                                                                                                              |
|                                                              |                                                                                                              |
|                                                              |                                                                                                              |
|                                                              |                                                                                                              |
|                                                              |                                                                                                              |
| <b>Utilities – Scottish and Southern Energy Transmission</b> |                                                                                                              |
| B1033200/CD/2700/SSET/009 Rev 0                              | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Transmission Sheet 9 of 71  |
| B1033200/CD/2700/SSET/023 Rev 0                              | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Transmission Sheet 23 of 71 |
| B1033200/CD/2700/SSET/027 Rev 0                              | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Transmission Sheet 27 of 71 |
| B1033200/CD/2700/SSET/028 Rev 0                              | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Transmission Sheet 28 of 71 |
| B1033200/CD/2700/SSET/033 Rev 0                              | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Transmission Sheet 33 of 71 |
| B1033200/CD/2700/SSET/041 Rev 0                              | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Transmission Sheet 41 of 71 |
| B1033200/CD/2700/SSET/047 Rev 0                              | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Transmission Sheet 47 of 71 |
| B1033200/CD/2700/SSET/060 Rev 1                              | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Transmission Sheet 60 of 71 |
| B1033200/CD/2700/SSET/070 Rev 1                              | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Transmission Sheet 70 of 71 |
| <b>Utilities – Scottish and Southern Energy Distribution</b> |                                                                                                              |
| B1033200/CD/2700/SSED/001 Rev 1                              | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 1 of 71  |
| B1033200/CD/2700/SSED/004 Rev 1                              | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 4 of 71  |

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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>              | <b>Title</b>                                                                                                 |
|------------------------------------|--------------------------------------------------------------------------------------------------------------|
| B1033200/CD/2700/SSED/007<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 7 of 71  |
| B1033200/CD/2700/SSED/008<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 8 of 71  |
| B1033200/CD/2700/SSED/009<br>Rev 2 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 9 of 71  |
| B1033200/CD/2700/SSED/010<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 10 of 71 |
| B1033200/CD/2700/SSED/013<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 13 of 71 |
| B1033200/CD/2700/SSED/014<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 14 of 71 |
| B1033200/CD/2700/SSED/015<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 15 of 71 |
| B1033200/CD/2700/SSED/017<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 17 of 71 |
| B1033200/CD/2700/SSED/018<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 18 of 71 |
| B1033200/CD/2700/SSED/019<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 19 of 71 |
| B1033200/CD/2700/SSED/020<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 20 of 71 |
| B1033200/CD/2700/SSED/021<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 21 of 71 |
| B1033200/CD/2700/SSED/022<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 22 of 71 |
| B1033200/CD/2700/SSED/023<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 23 of 71 |
| B1033200/CD/2700/SSED/024<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 24 of 71 |
| B1033200/CD/2700/SSED/025<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 25 of 71 |
| B1033200/CD/2700/SSED/026<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 26 of 71 |
| B1033200/CD/2700/SSED/027<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 27 of 71 |
| B1033200/CD/2700/SSED/028<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 28 of 71 |
| B1033200/CD/2700/SSED/029<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 29 of 71 |
| B1033200/CD/2700/SSED/030<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 30 of 71 |
| B1033200/CD/2700/SSED/032<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 32 of 71 |
| B1033200/CD/2700/SSED/033<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 33 of 71 |
| B1033200/CD/2700/SSED/034<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 34 of 71 |

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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>              | <b>Title</b>                                                                                                 |
|------------------------------------|--------------------------------------------------------------------------------------------------------------|
| B1033200/CD/2700/SSED/035<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 35 of 71 |
| B1033200/CD/2700/SSED/036<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 36 of 71 |
| B1033200/CD/2700/SSED/037<br>Rev 2 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 37 of 71 |
| B1033200/CD/2700/SSED/038<br>Rev 2 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 38 of 71 |
| B1033200/CD/2700/SSED/039<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 39 of 71 |
| B1033200/CD/2700/SSED/040<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 40 of 71 |
| B1033200/CD/2700/SSED/041<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 41 of 71 |
| B1033200/CD/2700/SSED/042<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 42 of 71 |
| B1033200/CD/2700/SSED/043<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 43 of 71 |
| B1033200/CD/2700/SSED/044<br>Rev 2 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 44 of 71 |
| B1033200/CD/2700/SSED/046<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 46 of 71 |
| B1033200/CD/2700/SSED/047<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 47 of 71 |
| B1033200/CD/2700/SSED/050<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 50 of 71 |
| B1033200/CD/2700/SSED/051<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 51 of 71 |
| B1033200/CD/2700/SSED/052<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 52 of 71 |
| B1033200/CD/2700/SSED/053<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 53 of 71 |
| B1033200/CD/2700/SSED/054<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 54 of 71 |
| B1033200/CD/2700/SSED/055<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 55 of 71 |
| B1033200/CD/2700/SSED/056<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 56 of 71 |
| B1033200/CD/2700/SSED/057<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 57 of 71 |
| B1033200/CD/2700/SSED/058<br>Rev 2 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 58 of 71 |
| B1033200/CD/2700/SSED/059<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 59 of 71 |
| B1033200/CD/2700/SSED/060<br>Rev 2 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 60 of 71 |
| B1033200/CD/2700/SSED/061<br>Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 61 of 71 |

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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>           | <b>Title</b>                                                                                                 |
|---------------------------------|--------------------------------------------------------------------------------------------------------------|
| B1033200/CD/2700/SSED/062 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 62 of 71 |
| B1033200/CD/2700/SSED/063 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 63 of 71 |
| B1033200/CD/2700/SSED/064 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 64 of 71 |
| B1033200/CD/2700/SSED/065 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 65 of 71 |
| B1033200/CD/2700/SSED/066 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 66 of 71 |
| B1033200/CD/2700/SSED/067 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 67 of 71 |
| B1033200/CD/2700/SSED/068 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 68 of 71 |
| B1033200/CD/2700/SSED/069 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 69 of 71 |
| B1033200/CD/2700/SSED/070 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 70 of 71 |
| B1033200/CD/2700/SSED/071 Rev 1 | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Distribution Sheet 71 of 71 |
| P246600/2700/SSED/001 Rev B     | A90 Balmedie to Tipperty INDICATIVE DESIGN – SCOTTISH AND SOUTHERN ENERGY DISTRIBUTION – SHEET 1 OF 19       |
| P246600/2700/SSED/002 Rev B     | A90 Balmedie to Tipperty INDICATIVE DESIGN – SCOTTISH AND SOUTHERN ENERGY DISTRIBUTION – SHEET 2 OF 19       |
| P246600/2700/SSED/003 Rev C     | A90 Balmedie to Tipperty INDICATIVE DESIGN – SCOTTISH AND SOUTHERN ENERGY DISTRIBUTION – SHEET 3 OF 19       |
| P246600/2700/SSED/004 Rev C     | A90 Balmedie to Tipperty INDICATIVE DESIGN – SCOTTISH AND SOUTHERN ENERGY DISTRIBUTION – SHEET 4 OF 19       |
| P246600/2700/SSED/005 Rev C     | A90 Balmedie to Tipperty INDICATIVE DESIGN – SCOTTISH AND SOUTHERN ENERGY DISTRIBUTION – SHEET 5 OF 19       |
| P246600/2700/SSED/006 Rev B     | A90 Balmedie to Tipperty INDICATIVE DESIGN – SCOTTISH AND SOUTHERN ENERGY DISTRIBUTION – SHEET 6 OF 19       |
| P246600/2700/SSED/007 Rev B     | A90 Balmedie to Tipperty INDICATIVE DESIGN – SCOTTISH AND SOUTHERN ENERGY DISTRIBUTION – SHEET 7 OF 19       |
| P246600/2700/SSED/008 Rev B     | A90 Balmedie to Tipperty INDICATIVE DESIGN – SCOTTISH AND SOUTHERN ENERGY DISTRIBUTION – SHEET 8 OF 19       |
| P246600/2700/SSED/009 Rev B     | A90 Balmedie to Tipperty INDICATIVE DESIGN – SCOTTISH AND SOUTHERN ENERGY DISTRIBUTION – SHEET 9 OF 19       |
| P246600/2700/SSED/010 Rev B     | A90 Balmedie to Tipperty INDICATIVE DESIGN – SCOTTISH AND SOUTHERN ENERGY DISTRIBUTION – SHEET 10 OF 19      |
| P246600/2700/SSED/011 Rev B     | A90 Balmedie to Tipperty INDICATIVE DESIGN – SCOTTISH AND SOUTHERN ENERGY DISTRIBUTION – SHEET 11 OF 19      |
| P246600/2700/SSED/012 Rev B     | A90 Balmedie to Tipperty INDICATIVE DESIGN – SCOTTISH AND SOUTHERN ENERGY DISTRIBUTION – SHEET 12 OF 19      |
| P246600/2700/SSED/013 Rev B     | A90 Balmedie to Tipperty INDICATIVE DESIGN – SCOTTISH AND SOUTHERN ENERGY DISTRIBUTION – SHEET 13 OF 19      |

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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>                                    | <b>Title</b>                                                                                             |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| P246600/2700/SSED/014 Rev B                              | A90 Balmedie to Tippetty INDICATIVE DESIGN – SCOTTISH AND SOUTHERN ENERGY DISTRIBUTION – SHEET 14 OF 19  |
| P246600/2700/SSED/015 Rev B                              | A90 Balmedie to Tippetty INDICATIVE DESIGN – SCOTTISH AND SOUTHERN ENERGY DISTRIBUTION – SHEET 15 OF 19  |
| P246600/2700/SSED/016 Rev B                              | A90 Balmedie to Tippetty INDICATIVE DESIGN – SCOTTISH AND SOUTHERN ENERGY DISTRIBUTION – SHEET 16 OF 19  |
| P246600/2700/SSED/017 Rev B                              | A90 Balmedie to Tippetty INDICATIVE DESIGN – SCOTTISH AND SOUTHERN ENERGY DISTRIBUTION – SHEET 17 OF 19  |
| P246600/2700/SSED/018 Rev C                              | A90 Balmedie to Tippetty INDICATIVE DESIGN – SCOTTISH AND SOUTHERN ENERGY DISTRIBUTION – SHEET 18 OF 19  |
| P246600/2700/SSED/019 Rev B                              | A90 Balmedie to Tippetty INDICATIVE DESIGN – SCOTTISH AND SOUTHERN ENERGY DISTRIBUTION – SHEET 19 OF 19  |
| <b>Utilities – Scottish and Southern Energy Telecoms</b> |                                                                                                          |
| B1033200/CD/2700/SSEC/009 Rev 0                          | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Telecoms Sheet 9 of 71  |
| B1033200/CD/2700/SSEC/041 Rev 0                          | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Telecoms Sheet 41 of 71 |
| B1033200/CD/2700/SSEC/053 Rev 0                          | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Telecoms Sheet 53 of 71 |
| B1033200/CD/2700/SSEC/054 Rev 0                          | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Telecoms Sheet 54 of 71 |
| B1033200/CD/2700/SSEC/055 Rev 0                          | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Telecoms Sheet 55 of 71 |
| B1033200/CD/2700/SSEC/071 Rev 0                          | Aberdeen Western Peripheral Route Indicative Design Scottish and Southern Energy Telecoms Sheet 71 of 71 |
| P246600/2700/SSEC/001 Rev 0                              | A90 Balmedie to Tippetty Indicative Design Scottish and Southern Energy Telecoms Sheet 1 of 19           |
| P246600/2700/SSEC/002 Rev 0                              | A90 Balmedie to Tippetty Indicative Design Scottish and Southern Energy Telecoms Sheet 2 of 19           |
| P246600/2700/SSEC/003 Rev 0                              | A90 Balmedie to Tippetty Indicative Design Scottish and Southern Energy Telecoms Sheet 3 of 19           |
| P246600/2700/SSEC/004 Rev 0                              | A90 Balmedie to Tippetty Indicative Design Scottish and Southern Energy Telecoms Sheet 4 of 19           |
| P246600/2700/SSEC/007 Rev 0                              | A90 Balmedie to Tippetty Indicative Design Scottish and Southern Energy Telecoms Sheet 7 of 19           |
| P246600/2700/SSEC/008 Rev 0                              | A90 Balmedie to Tippetty Indicative Design Scottish and Southern Energy Telecoms Sheet 8 of 19           |
| P246600/2700/SSEC/009 Rev 0                              | A90 Balmedie to Tippetty Indicative Design Scottish and Southern Energy Telecoms Sheet 9 of 19           |
| P246600/2700/SSEC/010 Rev 0                              | A90 Balmedie to Tippetty Indicative Design Scottish and Southern Energy Telecoms Sheet 10 of 19          |
| P246600/2700/SSEC/012 Rev 0                              | A90 Balmedie to Tippetty Indicative Design Scottish and Southern Energy Telecoms Sheet 12 of 19          |
| P246600/2700/SSEC/014 Rev 0                              | A90 Balmedie to Tippetty Indicative Design Scottish and Southern Energy Telecoms Sheet 14 of 19          |
| <b>Utilities - Traffic Master</b>                        |                                                                                                          |
| B1033200/CD/2700/TM/065 Rev 0                            | Aberdeen Western Peripheral Route Indicative Design Trafficmaster Sheet 65 of 71                         |

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**Appendix 0/4: List of Drawings for the New Works**

| Drawing Number                     | Title                                                                        |
|------------------------------------|------------------------------------------------------------------------------|
| <b>Indicative Landscape Design</b> |                                                                              |
| B1033200/CD/3000/L/001 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 1 of 71  |
| B1033200/CD/3000/L/002 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 2 of 71  |
| B1033200/CD/3000/L/003 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 3 of 71  |
| B1033200/CD/3000/L/004 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 4 of 71  |
| B1033200/CD/3000/L/005 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 5 of 71  |
| B1033200/CD/3000/L/006 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 6 of 71  |
| B1033200/CD/3000/L/007 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 7 of 71  |
| B1033200/CD/3000/L/008 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 8 of 71  |
| B1033200/CD/3000/L/009 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 9 of 71  |
| B1033200/CD/3000/L/010 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 10 of 71 |
| B1033200/CD/3000/L/011 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 11 of 71 |
| B1033200/CD/3000/L/012 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 12 of 71 |
| B1033200/CD/3000/L/013 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 13 of 71 |
| B1033200/CD/3000/L/014 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 14 of 71 |
| B1033200/CD/3000/L/015 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 15 of 71 |
| B1033200/CD/3000/L/016 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 16 of 71 |
| B1033200/CD/3000/L/017 Rev 4       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 17 of 71 |
| B1033200/CD/3000/L/018 Rev 4       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 18 of 71 |
| B1033200/CD/3000/L/019 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 19 of 71 |
| B1033200/CD/3000/L/020 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 20 of 71 |
| B1033200/CD/3000/L/021 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 21 of 71 |
| B1033200/CD/3000/L/022 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 22 of 71 |
| B1033200/CD/3000/L/023 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 23 of 71 |
| B1033200/CD/3000/L/024 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 24 of 71 |
| B1033200/CD/3000/L/025 Rev 3       | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 25 of 71 |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>        | <b>Title</b>                                                                 |
|------------------------------|------------------------------------------------------------------------------|
| B1033200/CD/3000/L/026 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 26 of 71 |
| B1033200/CD/3000/L/027 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 27 of 71 |
| B1033200/CD/3000/L/028 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 28 of 71 |
| B1033200/CD/3000/L/029 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 29 of 71 |
| B1033200/CD/3000/L/030 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 30 of 71 |
| B1033200/CD/3000/L/031 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 31 of 71 |
| B1033200/CD/3000/L/032 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 32 of 71 |
| B1033200/CD/3000/L/033 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 33 of 71 |
| B1033200/CD/3000/L/034 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 34 of 71 |
| B1033200/CD/3000/L/035 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 35 of 71 |
| B1033200/CD/3000/L/036 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 36 of 71 |
| B1033200/CD/3000/L/037 Rev 4 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 37 of 71 |
| B1033200/CD/3000/L/038 Rev 4 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 38 of 71 |
| B1033200/CD/3000/L/039 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 39 of 71 |
| B1033200/CD/3000/L/040 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 40 of 71 |
| B1033200/CD/3000/L/041 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 41 of 71 |
| B1033200/CD/3000/L/042 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 42 of 71 |
| B1033200/CD/3000/L/043 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 43 of 71 |
| B1033200/CD/3000/L/044 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 44 of 71 |
| B1033200/CD/3000/L/045 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 45 of 71 |
| B1033200/CD/3000/L/046 Rev 4 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 46 of 71 |
| B1033200/CD/3000/L/047 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 47 of 71 |
| B1033200/CD/3000/L/048 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 48 of 71 |
| B1033200/CD/3000/L/049 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 49 of 71 |
| B1033200/CD/3000/L/050 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 50 of 71 |
| B1033200/CD/3000/L/051 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 51 of 71 |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>        | <b>Title</b>                                                                               |
|------------------------------|--------------------------------------------------------------------------------------------|
| B1033200/CD/3000/L/052 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 52 of 71               |
| B1033200/CD/3000/L/053 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 53 of 71               |
| B1033200/CD/3000/L/054 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 54 of 71               |
| B1033200/CD/3000/L/055 Rev 4 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 55 of 71               |
| B1033200/CD/3000/L/056 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 56 of 71               |
| B1033200/CD/3000/L/057 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 57 of 71               |
| B1033200/CD/3000/L/058 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 58 of 71               |
| B1033200/CD/3000/L/059 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 59 of 71               |
| B1033200/CD/3000/L/060 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 60 of 71               |
| B1033200/CD/3000/L/061 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 61 of 71               |
| B1033200/CD/3000/L/062 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 62 of 71               |
| B1033200/CD/3000/L/063 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 63 of 71               |
| B1033200/CD/3000/L/064 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 64 of 71               |
| B1033200/CD/3000/L/065 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 65 of 71               |
| B1033200/CD/3000/L/066 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 66 of 71               |
| B1033200/CD/3000/L/067 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 67 of 71               |
| B1033200/CD/3000/L/068 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 68 of 71               |
| B1033200/CD/3000/L/069 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 69 of 71               |
| B1033200/CD/3000/L/070 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 70 of 71               |
| B1033200/CD/3000/L/071 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Sheet 71 of 71               |
| B1033200/CD/3000/L/072 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Planting Schedules           |
| B1033200/CD/3000/L/073 Rev 3 | Aberdeen Western Peripheral Route Indicative Landscape Design Planting Schedules and Notes |
| P246600-ENVI-2-3000-PS Rev 2 | A90 Balmedie to Tippetty Planting Schedules (Indicative Landscape Design) Sheet 1 of 1     |
| P246600-ENVI-2-3001 Rev 2    | A90 Balmedie to Tippetty Indicative Landscape Design Sheet 1 of 19                         |
| P246600-ENVI-2-3002 Rev 3    | A90 Balmedie to Tippetty Indicative Landscape Design Sheet 2 of 19                         |



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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>      | <b>Title</b>                                                                                         |
|----------------------------|------------------------------------------------------------------------------------------------------|
| P246600-ENVI-2-3003 Rev 2  | A90 Balmedie to Tippetty Indicative Landscape Design Sheet 3 of 19                                   |
| P246600-ENVI-2-3004 Rev 2  | A90 Balmedie to Tippetty Indicative Landscape Design Sheet 4 of 19                                   |
| P246600-ENVI-2-3005 Rev 2  | A90 Balmedie to Tippetty Indicative Landscape Design Sheet 5 of 19                                   |
| P246600-ENVI-2-3006 Rev 2  | A90 Balmedie to Tippetty Indicative Landscape Design Sheet 6 of 19                                   |
| P246600-ENVI-2-3007 Rev 1  | A90 Balmedie to Tippetty Indicative Landscape Design Sheet 7 of 19                                   |
| P246600-ENVI-2-3008 Rev 2  | A90 Balmedie to Tippetty Indicative Landscape Design Sheet 8 of 19                                   |
| P246600-ENVI-2-3009 Rev 3  | A90 Balmedie to Tippetty Indicative Landscape Design Sheet 9 of 19                                   |
| P246600-ENVI-2-3010 Rev 2  | A90 Balmedie to Tippetty Indicative Landscape Design Sheet 10 of 19                                  |
| P246600-ENVI-2-3011 Rev 2  | A90 Balmedie to Tippetty Indicative Landscape Design Sheet 11 of 19                                  |
| P246600-ENVI-2-3012 Rev 2  | A90 Balmedie to Tippetty Indicative Landscape Design Sheet 12 of 19                                  |
| P246600-ENVI-2-3013 Rev 2  | A90 Balmedie to Tippetty Indicative Landscape Design Sheet 13 of 19                                  |
| P246600-ENVI-2-3014 Rev 2  | A90 Balmedie to Tippetty Indicative Landscape Design Sheet 14 of 19                                  |
| P246600-ENVI-2-3015 Rev 2  | A90 Balmedie to Tippetty Indicative Landscape Design Sheet 15 of 19                                  |
| P246600-ENVI-2-3016 Rev 3  | A90 Balmedie to Tippetty Indicative Landscape Design Sheet 16 of 19                                  |
| P246600-ENVI-2-3017 Rev 2  | A90 Balmedie to Tippetty Indicative Landscape Design Sheet 17 of 19                                  |
| P246600-ENVI-2-3018 Rev 3  | A90 Balmedie to Tippetty Indicative Landscape Design Sheet 18 of 19                                  |
| P246600-ENVI-2-3019 Rev 3  | A90 Balmedie to Tippetty Indicative Landscape Design Sheet 19 of 19                                  |
| <b>ITS</b>                 |                                                                                                      |
| B1033200/CD/1510/001 Rev 0 | Aberdeen Western Peripheral Route Typical CCTV Layout and Connection Detail                          |
| B1033200/CD/1510/002 Rev 0 | Aberdeen Western Peripheral Route Typical National Traffic Data Service Layout and Connection Detail |
| B1033200/CD/1510/003 Rev 0 | Aberdeen Western Peripheral Route Typical Weigh – in - Motion Layout and Connection Detail           |
| B1033200/CD/1510/004 Rev 0 | Aberdeen Western Peripheral Route Typical Variable Message Sign Layout and Connection Detail         |
| B1033200/CD/1510/005 Rev 0 | Aberdeen Western Peripheral Route Typical Journey Time Facility Layout and Connection Detail         |
| B1033200/CD/1510/006 Rev 0 | Aberdeen Western Peripheral Route Typical Combined Equipment Cabinet Ducting Arrangements            |
| B1033200/CD/1510/007 Rev 0 | Aberdeen Western Peripheral Route Typical Equipment Cabinets Internal Arrangements                   |

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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>      | <b>Title</b>                                                                                                  |
|----------------------------|---------------------------------------------------------------------------------------------------------------|
| B1033200/CD/1510/008 Rev 0 | Aberdeen Western Peripheral Route Traffic Scotland Service Equipment Numbering Route Chainages                |
| NDX1001-01ga Rev C         | Typical Overall Type 1 Cantilever MK3 VMS Site Infrastructure Sheet 1 of 7                                    |
| NDX1001-01ga Rev C         | Typical Site Layout for Type 1 Cantilever MK3 Variable Message Sign Sheet 2 of 7                              |
| NDX1001-01ly Rev B         | Typical Overall CEC Gantry/VMS Site Layout Sheet 3 of 7                                                       |
| NDX1001-01ly Rev B         | Typical Layout or CEC Gantry/VMS Site Sheet 4 of 7                                                            |
| NDX1001-01dt Rev C         | Installation Drawing for Typical Safety Fence & Earth Bonding at Type 1 Cantilever MK3 VMS Sites Sheet 5 of 7 |
| NDX1001-02ga Rev A         | Typical Overall Cantilever MS3 400/320mm VMS Site Infrastructure Sheet 1 of 3                                 |
| NDX1001-02ga Rev 2         | Typical Cantilever MS3 400/320mm Variable Message Signs Sheet 2 of 3                                          |
| NDX1001-02ga Rev B         | Typical Cantilever Variable Message Signs Ladder Access Sheet 3 of 3                                          |
| NDX1001-03ga Rev 2         | Typical Overall Cantilever MS4 400/320mm VMS Site Infrastructure Sheet 1 of 2                                 |
| NDX1001-03ga Rev 1         | Typical Cantilever MS4 400/320mm Variable Message Signs Sheet 2 of 2                                          |
| NDX1001-04ga Rev 2         | Typical Overall Cantilever Continuous Matrix 400/320mm VMS Site Infrastructure Sheet 1 of 2                   |
| NDX1001-04ga Rev 1         | Typical Cantilever Continuous Matrix 400/320mm Variable Message Signs Sheet 2 of 2                            |
| NDX1002-00ga Rev C         | Typical HA Type 600 Cabinet Installation - Plinths Sheet 1 of 17                                              |
| NDX1002-00dt Rev E         | Typical Type 600 Cabinet Foundations Sheet 2 of 17                                                            |
| NDX1002-00dt Rev A         | Earth Stud Typical Assembly Sheet 3 of 17                                                                     |
| NDX1002-00dt Rev C         | Typical HA Type 600 Cabinet Door Security Strap Sheet 4 of 17                                                 |
| NDX1002-00dt Rev D         | Typical HA Type 600 Cabinet Thermostat & Heater Type 1020 Sheet 5 of 17                                       |
| NDX1002-00dt Rev B         | HA Type 600 Cabinet Labels Sheet 6 of 17                                                                      |
| NDX1002-00no Rev C         | HA Type 600 Cabinet Labels Sheet 7 of 17                                                                      |
| NDX1002-00ga Rev B         | HA Type 600 Cabinet Installation Sheet 8 of 17                                                                |
| NDX1002-00no Rev B         | HA Type 600 Cabinet Installation Notes Sheet 9 of 17                                                          |
| NDX1002-01ga Rev C         | Typical HA 600 Cabinet Modified Internal Frame Sheet 1 of 6                                                   |
| NDX1002-01ga Rev B         | TBU/Scanner Type HA 600 Cabinet Internal Equipment Layout Sheet 2 of 6                                        |
| NDX1002-06dt Rev B         | Typical Electrically Energised Communications Cabinet Labels Sheet 1 of 2                                     |

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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b> | <b>Title</b>                                                                                                 |
|-----------------------|--------------------------------------------------------------------------------------------------------------|
| NDX1002-06no Rev B    | Typical Electrically Energised Communications Cabinet Labels Sheet 2 of 2                                    |
| NDX1002-07ga Rev B    | Typical CEC Cabinet Installation – Hard-Standing, Plinths and Foundations Sheet 1 of 3                       |
| NDX1002-07dt Rev A    | Typical CEC Site Layout Including Vehicle Hard-Standing Sheet 2 of 3                                         |
| NDX1002-07dt Rev A    | Typical CEC Cabinet Labels Sheet 3 of 3                                                                      |
| NDX1002-08ga Rev 1    | Typical Scottish Type 600(S) Cabinet – General arrangement Sheet 1 of 4                                      |
| NDX1002-08dt Rev 1    | Typical Scottish Type 600(S) Cabinet – Foundations/Plinth Sheet 2 of 4                                       |
| NDX1002-08dt Rev 1    | Typical Type 610 Frame for Scottish Type 600(S) Cabinet Sheet 3 of 4                                         |
| NDX1002-08dt Rev 1    | Typical Type 610 Skirt for Scottish Type 600(S) Cabinet Sheet 4 of 4                                         |
| NDX1002-09dt Rev 1    | Typical CECR Cabinet – Foundations/Plinth Sheet 1 of 2                                                       |
| NDX1002-09sp Rev 0    | For Future Use Sheet 2 of 2                                                                                  |
| NDX1002-10dt Rev 1    | Typical CECR+1 Cabinet – Foundations/Plinths Sheet 1 of 2                                                    |
| NDX1002-10dt Rev 1    | Typical CECR+1 Cabinet Site Layout including Vehicle hard standing Sheet 2 of 2                              |
| NDX1007-01cl Rev A    | Detector Loop Layout (Monitoring) Sheet 1 of 3                                                               |
| NDX1007-01cl Rev D    | Typical Detector Loop Site Sheet 2 of 3                                                                      |
| NDX1010-00ly Rev A    | Typical Camera Site – Cabinet Layout Sheet 1 of 4                                                            |
| NDX1010-00ly Rev A    | Typical Camera Site – Duct Layout Sheet 2 of 4                                                               |
| NDX1010-00wd Rev A    | Typical Camera Site – Earthing Arrangement Sheet 3 of 4                                                      |
| NDX1010-00cl Rev B    | Typical 10 & 15 Metre CCTV Mast, Cabinet Base & Paved Area Sheet 4 of 4                                      |
| NDX1011-01ga Rev E    | Typical Electrical Supply & Distribution Cabinets Installation Detail Sheet 1 of 7                           |
| NDX1011-01wd Rev C    | Termination Pillar Type L (Lucy) Electricity Suppliers Connection – TP Sheet 2 of 7                          |
| NDX1011-01wd Rev D    | Traffic Electrical Distribution Pillar Type – TEDP Sheet 3 of 7                                              |
| NDX1011-01wd Rev A    | Traffic Electrical Distribution Pillar Type – TEDP 16mm sq to 35mm sq CSA Cables Sheet 4 of 7                |
| NDX1011-01cd Rev C    | Typical Type L, TP & TEDP Cabinets Circuit Detail Sheet 5 of 7                                               |
| NDX1011-01no Rev D    | Item List & Notes for Type L, TP & TEDP Cabinets Sheet 6 of 7                                                |
| NDX1011-01dt Rev E    | Typical Labels For Electrical Supply, Distribution & Other Electrical Supply Equipment Cabinets Sheet 7 of 7 |

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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b> | <b>Title</b>                                                                                                  |
|-----------------------|---------------------------------------------------------------------------------------------------------------|
| NDX1011-06ga Rev A    | Typical Layout of Termination Pillar (TP) Sheet 1 of 4                                                        |
| NDX1011-06il Rev A    | Typical Item List for Layout Termination Pillar (TP) Sheet 2 of 4                                             |
| NDX1011-06no Rev A    | Typical Notes for Termination Pillar (TP) Sheet 3 of 4                                                        |
| NDX1011-06cd Rev A    | Typical Circuit Diagram of Termination Pillar (TP) Sheet 4 of 4                                               |
| NDX1011-07ga Rev A    | Typical Layout of Termination Pillar/Traffic Equipment Termination Pillar (TP/TEDP) Sheet 1 of 4              |
| NDX1011-07il Rev A    | Typical Item List for Typical Termination Pillar /Traffic Equipment Termination Pillar (TP/TEDP) Sheet 2 of 4 |
| NDX1011-07no Rev A    | Typical Notes for Termination Pillar/Traffic Equipment Termination Pillar (TP/TEDP) Sheet 3 of 4              |
| NDX1011-07cd Rev A    | Typical Circuit Diagram of Termination Pillar/Traffic Equipment Termination Pillar (TP/TEDP) Sheet 4 of 4     |
| NDX1011-08ga Rev A    | Typical Layout of Traffic Equipment Termination Pillar (TEDP) Sheet 1 of 4                                    |
| NDX1011-08il Rev A    | Typical Item List for Typical Traffic Equipment Termination Pillar (TEDP) Sheet 2 of 4                        |
| NDX1011-08no Rev A    | Typical Notes for Traffic Equipment Termination Pillar (TEDP) Sheet 3 of 4                                    |
| NDX1011-08cd Rev A    | Typical Circuit Diagram of Traffic Equipment Termination Pillar (TEDP) Sheet 4 of 4                           |
| NDX1029-03ga Rev A    | Typical Installation and Support Detail for Motorway Access Controller (MAC) Sheet 1 of 1                     |
| NDX1034-00ga Rev A    | General Assembly of HA 609 Cabinet Sheet 1 of 6                                                               |
| NDX1034-00dt Rev A    | HA Type 609 Cabinet Door Security Strap Sheet 2 of 6                                                          |
| NDX1034-00dt Rev 2    | HA Type 609 Cabinet Foundations Sheet 4 of 4                                                                  |
| NDX1034-00no Rev 1    | HA Type 609 Cabinet Installation Notes Sheet 4 of 6                                                           |
| NDX1034-00dt Rev 1    | Cabinet HA Type 609 Labels Sheet 5 of 6                                                                       |
| NDX1034-00no Rev 1    | Cabinet HA Type 609 Label Notes Sheet 6 of 6                                                                  |
| NDX1034-01ga Rev B    | Private Wire Termination Cabinet Type 609 Sheet 1 of 1                                                        |
| NDX1034-02ga Rev B    | OF Cable Cassette Termination Arrangement in HA Type 609 Cabinet Sheet 1 of 6                                 |
| NDX1034-02il Rev A    | OF Cable Cassette Termination Arrangement in HA Type 609 Cabinet – Item List Sheet 2 of 6                     |
| NDX1034-02dt Rev A    | OF Cable Cassette Termination Through Arrangement in HA Type 609 Cabinet Sheet 3 of 6                         |
| NDX1034-02dt Rev A    | OF Cable Cassette Termination Through Arrangement in HA Type 609 Cabinet – L Sheet 4 of 6                     |
| NDX1034-02dt Rev A    | OF Cable Cassette Termination Through Arrangement in HA Type 609 Cabinet – Notes Sheet 5 of 6                 |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b> | <b>Title</b>                                                                                        |
|-----------------------|-----------------------------------------------------------------------------------------------------|
| NDX1034-02no Rev 1    | OF Cable Cassette Termination Arrangement in HA Type 609 Cabinet - Notes Sheet 6 of 6               |
| NDX1047-01ga Rev B    | Typical Overall Type 1 Verge Mounted VMS Site Infrastructure Sheet 1 of 2                           |
| NDX1047-01ga Rev A    | Typical Site for Type 1 Verge Mounted Variable Message Signs/MK3 Signal Sheet 2 of 2                |
| NDX1047-02ga Rev 2    | Typical Overall Verge Mounted MS3 400/320mm VMS Site Infrastructure Sheet 1 of 2                    |
| NDX1047-02ga Rev 3    | Typical Verge Mounted MS3 400/320mm Variable Message Sign Sheet 2 of 2                              |
| NDX1047-03ga Rev 2    | Typical Overall Verge Mounted MS3 240mm VMS Site Infrastructure Sheet 1 of 2                        |
| NDX1047-03ga Rev 2    | Typical Verge Mounted MS3 240mm Variable Message Sign Sheet 2 of 2                                  |
| NDX1047-04ga Rev 2    | Typical Overall Offset Verge Mounted MS4 VMS Site Infrastructure Sheet 1 of 2                       |
| NDX1047-04ga Rev 2    | Typical Offset Verge Mounted MS4 Variable Message Sign Sheet 2 of 2                                 |
| NDX1047-05ga Rev 2    | Typical Overall Verge Mounted Continuous Matrix 400/320mm VMS Site Infrastructure Sheet 1 of 2      |
| NDX1047-05ga Rev 2    | Typical Verge Mounted Continuous Matrix 400/320mm Variable Message Sign Sheet 2 of 2                |
| NDX1047-06ga Rev 2    | Typical Overall Verge Mounted Continuous Matrix 240mm VMS Site Infrastructure Sheet 1 of 2          |
| NDX1047-06ga Rev 1    | Typical Verge Mounted Continuous Matrix 240mm Variable Message Sign Sheet 2 of 2                    |
| NDX1061-00dt Rev A    | Typical Method of Sealing Unused Cable Ends Sheet 2 of 6                                            |
| NDX1061-00dt Rev A    | Typical Cable Identification Labels Sheet 3 of 6                                                    |
| NDX1063-00dt Rev D    | Typical Ducts Sheet 1 of 10                                                                         |
| NDX1063-00dt Rev B    | Typical Installation of Deep Transverse Ducts Sheet 2 of 10                                         |
| NDX1063-00dt Rev D    | Typical Duct Installation - Longitudinal Sheet 3 of 10                                              |
| NDX1063-00dt Rev C    | Typical Duct Installation - Local Ducts Sheet 4 of 10                                               |
| NDX1063-00dt Rev C    | Typical Duct Installation -Transverse Ducts Sheet 5 of 10                                           |
| NDX1063-00dt Rev C    | Typical Duct Installation – Spacers, Strapping and Longitudinal Duct Cable Allocation Sheet 6 of 10 |
| NDX1063-00dt Rev D    | Typical Duct Installation - Mechanical Duct Plugs Sheet 7 of 10                                     |
| NDX1063-00dt Rev B    | Typical Plan View of General Ducted System Layout- Both Verges Sheet 8 of 10                        |
| NDX1063-00cl Rev G    | Typical Plan View of Ducted System Layout- Single Verge Sheet 9 of 10                               |
| NDX1063-00cl Rev H    | Typical Plan View of Ducted System Layout- Single Verge Sheet 10 of 10                              |

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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>      | <b>Title</b>                                                                                    |
|----------------------------|-------------------------------------------------------------------------------------------------|
| NDX1063-01ga Rev C         | Typical Type A Chamber Construction Detail Sheet 1 of 1                                         |
| NDX1063-02ga Rev C         | Typical Type B Chamber Construction Detail Sheet 1 of 1                                         |
| NDX1063-03ga Rev C         | Typical Type C Chamber Construction Detail Sheet 1 of 1                                         |
| NDX1063-04ga Rev D         | Typical Type D Chamber Construction Detail Detector Loop Sites Sheet 1 of 2                     |
| NDX1063-04wd Rev C         | Typical Loop Wiring In Roadside Chamber At Detector Loop Sites (PTC Joint) Sheet 2 of 2         |
| NDX1070-01ga Rev B         | Typical Site Access Steps Sheet 1 of 1                                                          |
| NDX1070-02ga Rev B         | Typical Site Access Safety Handrail Detail Sheet 1 of 1                                         |
| NDX1072-00cl Rev E         | Typical Traffic Scotland Site Maintenance Hard-Standing. Sheet 1 of 1                           |
| NDX1097-01ga Rev B         | Typical 6-lane : 2x3.5 Class 1 Piezo-loop-Piezo WiM General Site Layout - loops Sheet 1 of 4    |
| NDX1097-01ga Rev B         | Typical 6-lane : 2x3.5 Class 1 Piezo-loop-Piezo WiM General Site Layout - cabinets Sheet 2 of 4 |
| NDX1097-01dt Rev A         | Typical WiM BL Sensor Installation Sheet 3 of 4                                                 |
| NDX1097-01dt Rev A         | Typical WiM Induction Loop Installation Sheet 4 of 4                                            |
| <b>Accommodation Works</b> |                                                                                                 |
| B1033200/AW/002/01 Rev 2   | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                                        |
| B1033200/AW/003/01 Rev 1   | Accommodation Works [REDACTED] Landfill Land Area Ref. [REDACTED]                               |
| B1033200/AW/005/01 Rev 1   | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                                        |
| B1033200/AW/008/01 Rev 2   | Accommodation Works [REDACTED] Land Ref Area Ref. [REDACTED]                                    |
| B1033200/AW/008/02 Rev 2   | Accommodation Works [REDACTED] Land Ref Area Ref. [REDACTED]                                    |
| B1033200/AW/008/03 Rev 2   | Accommodation Works [REDACTED] Land Ref Area Ref. [REDACTED]                                    |
| B1033200/AW/008/04 Rev 2   | Accommodation Works [REDACTED] Land Ref Area Ref. [REDACTED]                                    |
| B1033200/AW/010/01 Rev 4   | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                                        |
| B1033200/AW/013/01 Rev 2   | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                                        |
| B1033200/AW/013/02 Rev 2   | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                                        |
| B1033200/AW/013/03 Rev 2   | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                                        |
| B1033200/AW/017/01 Rev 4   | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                                        |

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**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>    | <b>Title</b>                                                             |
|--------------------------|--------------------------------------------------------------------------|
| B1033200/AW/018/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/019/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/020/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/021/01 Rev 1 | Accommodation Works Scottish Ministers Parkhill Land Area Ref. 21        |
| B1033200/AW/023/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/025/01 Rev 3 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/026/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref.[REDACTED]                  |
| B1033200/AW/029/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/034/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/036/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/037/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/038/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/039/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/052/01 Rev 4 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/053/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref.[REDACTED]                  |
| B1033200/AW/055/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/056/01 Rev 3 | Accommodation Works T[REDACTED] Land Area Ref. [REDACTED]                |
| B1033200/AW/056/02 Rev 3 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/058/01 Rev 3 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/058/02 Rev 4 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/058/03 Rev 3 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/059/01 Rev 3 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/059/02 Rev 3 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/061/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                 |
| B1033200/AW/063/01 Rev 3 | Accommodation Works Scottish Ministers Bogenjoss House Land Area Ref.063 |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>     | <b>Title</b>                                                 |
|---------------------------|--------------------------------------------------------------|
| B1033200/AW/065/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/065/02 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/066/01 Rev 1  | Accommodation Works [REDACTED] Land Ref Area Ref. [REDACTED] |
| B1033200/AW/069/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/100/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref.[REDACTED]      |
| B1033200/AW/101/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/101/02 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/101/03 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/101/04 Rev 3  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/103/01 Rev 2  | Accommodation Works [REDACTED] LAND AREA REF. [REDACTED]     |
| B1033200/AW/103/02 Rev 2  | Accommodation Works [REDACTED] LAND AREA REF. [REDACTED]     |
| B1033200/AW/104/01 Rev 2  | Accommodation Works [REDACTED] Land Ref. [REDACTED]          |
| B1033200/AW/105/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/108/01 Rev 1  | Accommodation Works Aberdeen City Council Land Area Ref. 108 |
| B1033200/AW/115/01 Rev 1  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/116/01 Rev 1  | Accommodation Works Aberdeen City Council Land Ref. 116      |
| B1033200/AW/206/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/209/01 Rev 1  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/210A/01 Rev 0 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/210B/01 Rev 0 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/211/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/214A/01 Rev 0 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/214B/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/214C/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/214C/02 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |



## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>    | <b>Title</b>                                                            |
|--------------------------|-------------------------------------------------------------------------|
| B1033200/AW/217/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                |
| B1033200/AW/223/01 Rev 3 | Accommodation Works Scottish Ministers Land Area Ref. 223               |
| B1033200/AW/228/01 Rev 4 | Accommodation Works [REDACTED] Land Area Ref [REDACTED]                 |
| B1033200/AW/229/01 Rev 3 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                |
| B1033200/AW/230/01 Rev 3 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                |
| B1033200/AW/233/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                |
| B1033200/AW/250/01 Rev 1 | Accommodation Works Forestry Commission Silvan House Land Area Ref. 250 |
| B1033200/AW/250/02 Rev 1 | Accommodation Works Forestry Commission Silvan House Land Area Ref. 250 |
| B1033200/AW/253/01 Rev 1 | Accommodation Works Forestry Commission Silvan House Land Area Ref. 253 |
| B1033200/AW/279/01 Rev 1 | Accommodation Works Scottish Ministers Newhall House Land Area Ref. 279 |
| B1033200/AW/282/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                |
| B1033200/AW/284/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref [REDACTED]                 |
| B1033200/AW/287/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                |
| B1033200/AW/288/01 Rev 3 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                |
| B1033200/AW/289/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                |
| B1033200/AW/292/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                |
| B1033200/AW/292/02 Rev 3 | Accommodation Works [REDACTED] Land Area [REDACTED]                     |
| B1033200/AW/302/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                |
| B1033200/AW/320/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                |
| B1033200/AW/322/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                |
| B1033200/AW/323/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                |
| B1033200/AW/329/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                |
| B1033200/AW/333/01 Rev 3 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                |
| B1033200/AW/333/02 Rev 3 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                |
| B1033200/AW/334/01 Rev 3 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>     | <b>Title</b>                                                 |
|---------------------------|--------------------------------------------------------------|
| B1033200/AW/348/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/349/01 Rev 3  | Accommodation Works [REDACTED] LAND AREA REF. [REDACTED]     |
| B1033200/AW/350/01 Rev 1  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/352/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/384/01 Rev 1  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/386/01 Rev 1  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/415/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/416/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/417/01 Rev 3  | Accommodation Works [REDACTED] Land Ref. [REDACTED]          |
| B1033200/AW/417/02 Rev 3  | Accommodation Works [REDACTED] Land Ref. [REDACTED]          |
| B1033200/AW/430/01 Rev 2  | Accommodation Works [REDACTED] Land Ref Area Ref. [REDACTED] |
| B1033200/AW/432A/01 Rev 0 | Accommodation Works [REDACTED] Land Ref Area Ref. [REDACTED] |
| B1033200/AW/438/01 Rev 3  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/438/02 Rev 3  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/442/01 Rev 1  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/443/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref.[REDACTED]      |
| B1033200/AW/444/01 Rev 1  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/445/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/447/01 Rev 1  | Accommodation Works [REDACTED] Land Area Ref.[REDACTED]      |
| B1033200/AW/460/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/466/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/467/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/471/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/473/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |
| B1033200/AW/477/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]     |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>     | <b>Title</b>                                             |
|---------------------------|----------------------------------------------------------|
| B1033200/AW/478/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED] |
| B1033200/AW/481/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED] |
| B1033200/AW/483/01 Rev 3  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED] |
| B1033200/AW/484/01 Rev 3  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED] |
| B1033200/AW/486/01 Rev 3  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED] |
| B1033200/AW/510/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED] |
| B1033200/AW/510/02 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED] |
| B1033200/AW/515/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED] |
| B1033200/AW/515/02 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED] |
| B1033200/AW/515/03 Rev 3  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED] |
| B1033200/AW/515/04 Rev 3  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED] |
| B1033200/AW/518/01 Rev 1  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED] |
| B1033200/AW/520A/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED] |
| B1033200/AW/520B/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED] |
| B1033200/AW/522/01 Rev 1  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED] |
| B1033200/AW/522/02 Rev 1  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED] |
| B1033200/AW/535/01 Rev 3  | Accommodation Works [REDACTED] Land Ref Area. [REDACTED] |
| B1033200/AW/536/01 Rev 2  | Accommodation Works [REDACTED] Land Ref Area. [REDACTED] |
| B1033200/AW/543/01 Rev 1  | Accommodation Works [REDACTED] Land Ref Area. [REDACTED] |
| B1033200/AW/543/02 Rev 1  | Accommodation Works [REDACTED] Land Ref Area. [REDACTED] |
| B1033200/AW/543/03 Rev 1  | Accommodation Works [REDACTED] Land Ref Area. [REDACTED] |
| B1033200/AW/551/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref: [REDACTED] |
| B1033200/AW/553/01 Rev 4  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED] |
| B1033200/AW/555/01 Rev 1  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED] |
| B1033200/AW/556/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED] |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>     | <b>Title</b>                                                              |
|---------------------------|---------------------------------------------------------------------------|
| B1033200/AW/556/02 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                  |
| B1033200/AW/556/03 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                  |
| B1033200/AW/556B/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                  |
| B1033200/AW/557/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                  |
| B1033200/AW/561/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                  |
| B1033200/AW/565/01 Rev 3  | Accommodation Works [REDACTED] Land Ref Area Ref. [REDACTED]              |
| B1033200/AW/566/01 Rev 1  | Accommodation Works Scottish Ministers Land Ref Area Ref. 566             |
| B1033200/AW/569/01 Rev 1  | Accommodation Works [REDACTED] Land Ref Area Ref. [REDACTED]              |
| B1033200/AW/578/01 Rev 2  | Accommodation Works [REDACTED] Land Ref Area Ref. [REDACTED]              |
| B1033200/AW/580/01 Rev 2  | Accommodation Works [REDACTED] Land Ref Area Ref. [REDACTED]              |
| B1033200/AW/584/01 Rev 1  | Accommodation Works [REDACTED] Land Ref Area Ref. [REDACTED]              |
| B1033200/AW/587/01 Rev 3  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                  |
| B1033200/AW/590/01 Rev 1  | Accommodation Works [REDACTED] Land Ref Area Ref. [REDACTED]              |
| B1033200/AW/593/01 Rev 1  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                  |
| B1033200/AW/597/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                  |
| B1033200/AW/610/01 Rev 2  | Accommodation Works Scottish Ministers Silverburn Farm Land Area Ref. 610 |
| B1033200/AW/612/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                  |
| B1033200/AW/617/01 Rev 1  | Accommodation Works Scottish Ministers Broomhill Land Area Ref. 617       |
| B1033200/AW/620/01 Rev 1  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                  |
| B1033200/AW/620/02 Rev 1  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                  |
| B1033200/AW/623/01 Rev 1  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                  |
| B1033200/AW/624/01 Rev 1  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                  |
| B1033200/AW/626/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                  |
| B1033200/AW/626/02 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                  |
| B1033200/AW/627/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                  |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>    | <b>Title</b>                                                                     |
|--------------------------|----------------------------------------------------------------------------------|
| B1033200/AW/627/02 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/627/03 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/629/01 Rev 5 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/629/02 Rev 5 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/629/03 Rev 4 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/631/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/632/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/632/02 Rev 3 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/633/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/633/02 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/634/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/634/02 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/635/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/636/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]2                        |
| B1033200/AW/639/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/647/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/716/01 Rev 1 | Accommodation Works [REDACTED] Land Ref Area Ref. [REDACTED]                     |
| B1033200/AW/718/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/723/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/742/01 Rev 1 | Accommodation Works [REDACTED] Land Ref Area Ref. [REDACTED]                     |
| B1033200/AW/744/01 Rev 2 | Accommodation Works D W Scottish Ministers Land Area Ref. 744                    |
| B1033200/AW/748/01 Rev 2 | Accommodation Works Scottish Ministers Dellwood Land Area Ref. 748               |
| B1033200/AW/750/01 Rev 2 | Accommodation [REDACTED] Land Area Ref. [REDACTED]                               |
| B1033200/AW/756/01 Rev 2 | Accommodation Works Scottish Ministers The Sidings Milltimber Land Area Ref. 756 |
| B1033200/AW/759/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>     | <b>Title</b>                                                                     |
|---------------------------|----------------------------------------------------------------------------------|
| B1033200/AW/769/01 Rev 1  | Accommodation Works [REDACTED] Land Ref Area Ref. [REDACTED]                     |
| B1033200/AW/1288/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/1736/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/5002/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/5003/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/5005/01 Rev 2 | Accommodation Works Scottish Ministers Beech Hill Milltimber Land Area Ref. 5005 |
| B1033200/AW/5137/01 Rev 2 | Accommodation Works Scottish Ministers Land Area Ref. 5137                       |
| B1033200/AW/5138/01 Rev 2 | Accommodation Works Scottish Ministers Land Area Ref. 5138                       |
| B1033200/AW/5142/01 Rev 2 | Accommodation Works Scottish Ministers Kerloch Land Area Ref. 5142               |
| B1033200/AW/5171/01 Rev 4 | Accommodation Works [REDACTED] LAND AREA REF. [REDACTED]                         |
| B1033200/AW/5175/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/5177/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/5194/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/6005/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/6006/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/6007/01 Rev 3 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/6008/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/6012/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/6013/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/6014/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/6020/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/6024/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/6026/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/6028/01 Rev 1 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |
| B1033200/AW/6031/01 Rev 2 | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                         |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>      | <b>Title</b>                                                                                                                            |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| B1033200/AW/6033/01 Rev 3  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                                                                                |
| B1033200/AW/6033/02 Rev 3  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                                                                                |
| B1033200/AW/6036/01 Rev 1  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                                                                                |
| B1033200/AW/6037/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                                                                                |
| B1033200/AW/6038/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                                                                                |
| B1033200/AW/6039/01 Rev 2  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                                                                                |
| B1033200/AW/6040/01 Rev 1  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                                                                                |
| B1033200/AW/7004/01 Rev 0  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                                                                                |
| B1033200/AW/7005/01 Rev 0  | Accommodation Works [REDACTED] Land Area Ref. [REDACTED]                                                                                |
| P246600/ACCO/2/14004 Rev 0 | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS [REDACTED] CPO PLOTS No [REDACTED]                                                |
| P246600/ACCO/2/14005 Rev A | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS TAYLORS INDUSTRIAL SERVICES LTD CPO PLOTS No 107, 108, 112                        |
| P246600/ACCO/2/14006 Rev B | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS [REDACTED] CPO PLOTS No [REDACTED]                                                |
| P246600/ACCO/2/14007 Rev 0 | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS ABERDEENSHIRE COUNCIL SHEET 1 OF 5 CPO PLOTS No 114, 115, 119, 131, 133, 134, 138 |
| P246600/ACCO/2/14008 Rev 0 | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS ABERDEENSHIRE COUNCIL SHEET 2 OF 5                                                |
| P246600/ACCO/2/14009 Rev 0 | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS ABERDEENSHIRE COUNCIL SHEET 3 OF 5 CPO PLOT No 510                                |
| P246600/ACCO/2/14010 Rev 0 | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS ABERDEENSHIRE COUNCIL SHEET 4 OF 5 CPO PLOTS No 517, 611                          |
| P246600/ACCO/2/14011 Rev 0 | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS ABERDEENSHIRE COUNCIL SHEET 5 OF 5                                                |
| P246600/ACCO/2/14013 Rev A | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS [REDACTED] CPO PLOTS [REDACTED]                                                   |
| P246600/ACCO/2/14014 Rev B | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS [REDACTED] CPO PLOTS No[REDACTED]                                                 |
| P246600/ACCO/2/14015 Rev B | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS [REDACTED] CPO PLOTS No [REDACTED]                                                |
| P246600/ACCO/2/14017 Rev A | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS [REDACTED] CPO PLOTS No [REDACTED]                                                |
| P246600/ACCO/2/14018 Rev E | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS [REDACTED] CPO PLOTS No [REDACTED]                                                |
| P246600/ACCO/2/14021 Rev D | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS [REDACTED] CPO PLOTS No [REDACTED]                                                |
| P246600/ACCO/2/14022 Rev 0 | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS [REDACTED] CPO PLOT No [REDACTED]                                                 |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

| <b>Drawing Number</b>       | <b>Title</b>                                                                                |
|-----------------------------|---------------------------------------------------------------------------------------------|
| P246600/ACCO/2/14024 Rev C  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOTS No [REDACTED] |
| P246600/ACCO/2/14025 Rev 0  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOTS No [REDACTED] |
| P246600/ACCO/2/14026 Rev B  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOTS No [REDACTED] |
| P246600/ACCO/2/14027 Rev A  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOT No [REDACTED]  |
| P246600/ACCO/2/14028 Rev D  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOT No [REDACTED]  |
| P246600/ACCO/2/14029 Rev B  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOT No [REDACTED]  |
| P246600/ACCO/2/14030 Rev B  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOTS No [REDACTED] |
| P246600/ACCO/2/14032 Rev 0  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOTS No [REDACTED] |
| P246600/ACCO/2/14033 Rev B  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOTS No [REDACTED] |
| P246600/ACCO/2/14034 Rev A  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOTS No [REDACTED] |
| P246600/ACCO/2/14035 Rev 0  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOTS No [REDACTED] |
| P246600/ACCO/2/14036 Rev D  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOTS No [REDACTED] |
| P246600/ACCO/2/14037 Rev C  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOTS No [REDACTED] |
| P246600/ACCO/2/14038 Rev A  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOTS No [REDACTED] |
| P246600/ACCO/2/14039 Rev C  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOTS No [REDACTED] |
| P246600/ACCO/2/14040 Rev 0  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOT [REDACTED]     |
| P246600/ACCO/2/14041 Rev B  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOTS No [REDACTED] |
| P246600/ACCO/2/14042 Rev A  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOTS No [REDACTED] |
| P246600/ACCO/2/14043 Rev A  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOTS No [REDACTED] |
| P246600/ACCO/2/14045 Rev E  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOTS No [REDACTED] |
| P246600/ACCO/2/14046 Rev A  | A90 Balmedie to Tippetty PROPOSED ACCOMMODATION WORKS<br>[REDACTED] CPO PLOTS No [REDACTED] |
| <b>Specific Commitments</b> |                                                                                             |
| P246600/02/01/SK269 Rev 0   | A90 Balmedie to Tippetty Keir Farm Underpass                                                |
| P246600/SK/DP/0502 Rev 0    | A90 Balmedie to Tippetty Westfield Road                                                     |



## Part 4: Specification

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**Appendix 0/4: List of Drawings for the New Works**

| Drawing Number            | Title                                       |
|---------------------------|---------------------------------------------|
| P246600/SKET/2/0353 Rev 0 | A90 Balmedie to Tippetty Mill Road, Foveran |

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**Appendix 0/4: List of Drawings for the New Works**
**1 List of Drawings Brought into the Agreement by Reference**

- 1.1 Highway Construction Details (HCD) published by The Stationery Office (formerly HMSO) as Volume 3 of the Manual of Contract Documents for Highway Works contains the following drawings brought into the Contract by reference. Unless otherwise stated below the whole drawing is brought into the Contract.

**List of Drawings Brought into the Contract by Reference**

| <b>Drawing Number</b>    | <b>Title</b>                                                                  | <b>Date</b> | <b>Aspect/Alternative(s) if Not Whole Drawing</b> |
|--------------------------|-------------------------------------------------------------------------------|-------------|---------------------------------------------------|
| MCHW Volume 3, Section 3 | MCX Series of Drawings*                                                       | Various     | Deleted                                           |
| Various                  | All drawings notwithstanding the requirements of other parts of the Agreement |             |                                                   |

\* Where an MCX standard drawing has not been replaced by an NDX standard drawing or other specific drawing with the written consent of the Traffic Scotland Manager

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**Appendix 0/4: List of Drawings for the New Works**
**2 List of Specifications Brought into the Agreement by Reference**

2.1 "Traffic Scotland" series of documents including inter alia:-

| <b>Document Number</b> | <b>Title</b>                                                                                                                 |
|------------------------|------------------------------------------------------------------------------------------------------------------------------|
| NDS 9553               | Special Requirements for the Testing of Cables for use with TASC based systems and Multipair Cables to CW1128/CW1198         |
| NDS 1624               | Standards and Procedures for the Preparation of Traffic Scotland Drawings                                                    |
| NDS 9001               | Traffic Scotland Health and Safety File Requirements and Model Forms                                                         |
| NDS 9551               | Requirements for Electricity Supply to Traffic Scotland and Associated Equipment Sites                                       |
| NDS 9565               | Guidance on the Use of standard Traffic Scotland Termination Pillars (TP) and Traffic Equipment Distribution Pillars (TEDP). |
| MCS601                 | Traffic Scotland Equipment Manual                                                                                            |
| MCS602                 | Traffic Scotland Maintenance and Service Manual                                                                              |
| LDS8016                | Scottish MCHW Series 1200, 1300 & 1400 and Sample Appendices.                                                                |

## Part 4: Specification

**Appendix 0/4: List of Drawings for the New Works**

2.2 Relevant Highways Agency MCG, MCH and TR specifications, and other specifications as required, including but not limited to:

| <b>Document Number</b>           | <b>Title/Reference</b>                                                                              |
|----------------------------------|-----------------------------------------------------------------------------------------------------|
| TR 2130                          | Environmental Tests for Motorway Equipment                                                          |
| MCG 1022                         | Testing for Newly Installed Communication and Power Cable (to be read in conjunction with NDS 9553) |
| MCG 1055                         | Testing for Newly Installed Motorway Optical Fibre Communication Cable (Single mode)                |
| MCH 1540                         | Installation of Loop Detectors on Motorways and All Purpose Trunk Roads                             |
| MCH 1589B                        | Guide to the Siting of Inductive Loop Detectors on Motorways                                        |
| TR 2161                          | Armoured Energy Cable                                                                               |
| TR 1100 & Associated Appendix A  | (Equivalent Standards Applicable are as per TR 1100C Section 3) Modified Section for Scotland       |
| WOEM 4421                        | (Transport Wales) Armoured Fibre Optic Cable                                                        |
| -                                | Disability Discrimination Act: Good Practice for Roads (Transport Scotland Publication)             |
| British Telecom CW1128/1198 - xx | xx denotes the number of pairs – 0.9mm conductor in petroleum jelly                                 |
| TRG 600                          | Self Certification Procedures for Statutory Approval for Traffic Control Equipment                  |

## Part 4: Specification

**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

The following additions, substitutions, cancellations and minor alterations shall be made:

**List of Substitute Clauses, Tables and Figures**

| <b>Clause Number</b> | <b>Title</b>                                                                                                       | <b>Page Number</b> |
|----------------------|--------------------------------------------------------------------------------------------------------------------|--------------------|
| <b>850SE</b>         | Crushed Gravel Sub-base Material Type 1                                                                            |                    |
| <b>1202TS</b>        | General Requirements for Permanent Traffic Signs                                                                   |                    |
| <b>1204TS</b>        | Posts for Permanent Traffic Signs                                                                                  |                    |
| <b>1218TS</b>        | Detector Loops                                                                                                     |                    |
| <b>1301TS</b>        | General                                                                                                            |                    |
| <b>1302TS</b>        | Design of Lighting Columns, Brackets, CCTV Masts, Cantilever Masts, Foundations, Anchorages and Attachment Systems |                    |
| <b>1303TS</b>        | Data Sheets                                                                                                        |                    |
| <b>1304TS</b>        | Identification and Location Markings                                                                               |                    |
| <b>1308TS</b>        | Handling, Transport and Erection                                                                                   |                    |
| <b>1401TS</b>        | General                                                                                                            |                    |
| <b>1402TS</b>        | Site Records                                                                                                       |                    |
| <b>1403TS</b>        | Location of Lighting Units and Feeder Pillars                                                                      |                    |
| <b>1407TS</b>        | Luminaires                                                                                                         |                    |
| <b>1409TS</b>        | Photo-electric Control Units                                                                                       |                    |
| <b>1412TS</b>        | Ballasts                                                                                                           |                    |
| <b>1416TS</b>        | Cut-outs, Fuse Holders, Fuses and Miniature Circuit Breakers (MCBs)                                                |                    |
| <b>1417TS</b>        | Base Compartment Fixing Arrangements                                                                               |                    |
| <b>1418TS</b>        | Feeder Pillars                                                                                                     |                    |
| <b>1419TS</b>        | Wiring                                                                                                             |                    |
| <b>1420TS</b>        | Earthing                                                                                                           |                    |
| <b>1421TS</b>        | Underground and Ducted Cable                                                                                       |                    |

**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

| <b>Clause Number</b> | <b>Title</b>                                                            | <b>Page Number</b> |
|----------------------|-------------------------------------------------------------------------|--------------------|
| 1422TS               | Cable Joints                                                            |                    |
| 1423TS               | Armoured Cable Terminations                                             |                    |
| 1424TS               | Inspection and Testing to be Carried Out by the Company                 |                    |
|                      |                                                                         |                    |
| 1501A                | Introduction                                                            |                    |
| 1502A                | General Requirements                                                    |                    |
| 1503A                | Materials, Equipment and Workmanship                                    |                    |
| 1504A                | Site Records                                                            |                    |
| 1505A                | Provision of Cabinets, Cables and Ancillary Items                       |                    |
| 1506A                | Cables                                                                  |                    |
| 1507A                | Cable Installation                                                      |                    |
| 1508A                | Installation of Cabinets                                                |                    |
| 1509A                | Gantries for Overhead Equipment                                         |                    |
| 1510A                | Emergency Roadside Telephones                                           |                    |
| 1511A                | Marker Tape                                                             |                    |
| 1512A                | Provision of and Installation of Ancillary Items                        |                    |
| 1513A                | Jointing and Termination of Multi-pair Communications and Feeder Cables |                    |
| 1514A                | Cable Connectors                                                        |                    |
| 1515A                | Jointing and Termination of Fibre Optic Communications Cables           |                    |
| 1516A                | Termination and Jointing of Power Supply Cables for Communications      |                    |
| 1517A                | Earthing and Bonding                                                    |                    |
| 1518A                | Cable Testing                                                           |                    |
| 1519A                | Labelling and Numbering                                                 |                    |

**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

| <b>Clause Number</b> | <b>Title</b>                                                                    | <b>Page Number</b> |
|----------------------|---------------------------------------------------------------------------------|--------------------|
| 1520A                | Loading                                                                         |                    |
| 1521A                | Removal and Re-siting of Existing Equipment                                     |                    |
| 1522A                | Works Impacting on Operational Traffic Scotland Systems                         |                    |
| 1523A                | Loop Detectors                                                                  |                    |
| 1524A                | Trial Pits                                                                      |                    |
| 1525A                | Not Used                                                                        |                    |
| 1526A                | The Inspection and Testing of Electrical Installations and Electrical Equipment |                    |
| 1527A                | Cable Installations at Transmission Stations                                    |                    |
| 1528A                | Modifications of Existing Cabinets                                              |                    |
| 1529A                | Temporary Roadside Emergency Telephones                                         |                    |
| 1530A                | Cable Ducts                                                                     |                    |
| 1531A                | Installation of Ducts                                                           |                    |
| 1532A                | Chambers for Traffic Scotland Cables                                            |                    |
| 1533A                | Proving and Testing of Ducts                                                    |                    |
| 1534A                | Closed Circuit Television                                                       |                    |
| 1535A                | Variable Message Signs                                                          |                    |
| 1536A                | Traffic Monitoring Units                                                        |                    |
| 1537A                | NDS Detectors and NDS Equipment                                                 |                    |
| 1538A                | Lane Control Signalling Equipment                                               |                    |
| 1539A                | Paved Areas, Access Paths, Access Steps and Hard Standings                      |                    |
| 1540A                | Required Documentation                                                          |                    |
| 1541A                | Journey Time Equipment                                                          |                    |
| 1542A                | Communications Equipment                                                        |                    |
| 1543A                | Specific Equipment Commissioning, Testing,                                      |                    |

**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

| <b>Clause Number</b> | <b>Title</b>                                                           | <b>Page Number</b> |
|----------------------|------------------------------------------------------------------------|--------------------|
|                      | Integration and Certification                                          |                    |
| <b>1544A</b>         | Power Supplies for Traffic Scotland Equipment                          |                    |
| <b>1545A</b>         | Spares                                                                 |                    |
| <b>1546A</b>         | Meteorological Equipment                                               |                    |
| <b>1547A</b>         | Ramp Metering                                                          |                    |
| <b>1548A</b>         | Enforcement Systems                                                    |                    |
| <b>1549A</b>         | Weigh In Motion Equipment                                              |                    |
| <b>1550A</b>         | Damage Repair Procedures                                               |                    |
|                      |                                                                        |                    |
| <b>1911SE</b>        | Paint and Similar Protective Coatings                                  |                    |
| <b>1912SE</b>        | Testing of Paints                                                      |                    |
| <b>1920SE</b>        | Additional Requirements for the Protection of Steel in Bridge Bearings |                    |

**List of Minor Alterations Clauses, Tables and Figures**

| <b>Clause Number</b> | <b>Title</b>                                           | <b>Page Number</b> |
|----------------------|--------------------------------------------------------|--------------------|
| <b>1702.2</b>        | Concrete – Ordinary Structural – Constituent Materials |                    |
| <b>N / A</b>         | Appendix A                                             |                    |



## Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland

### Substitute Clauses, Tables and Figures

| Clause Number    | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |                            |                |     |                  |          |                |         |               |         |             |        |            |        |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------|----------------|-----|------------------|----------|----------------|---------|---------------|---------|-------------|--------|------------|--------|
| 850SE            | <p><b>1 Crushed Gravel Sub-base Material Type 1</b></p> <p><b>Material Properties</b></p> <p>1.1 For the purpose of this Clause gravel is defined as aggregate derived from a natural, unconsolidated, coarse-grained sedimentary deposit consisting of water-worn rock fragments.</p> <p>1.2 Crushed gravel granular sub-base material Type 1 shall be derived from natural cobble-sized material (60 millimetres – 200 millimetres), or larger, crushed and screened to be well-graded and lie within the grading envelope of Table 8/50SE below.</p> <p><b>TABLE 8/50SE: Sub-base Type 1 Range of Grading</b></p> <table> <thead> <tr> <th>BS sieve size</th> <th>Percentage by mass passing</th> </tr> </thead> <tbody> <tr> <td>75 millimetres</td> <td>100</td> </tr> <tr> <td>37.5 millimetres</td> <td>85 – 100</td> </tr> <tr> <td>10 millimetres</td> <td>40 – 70</td> </tr> <tr> <td>5 millimetres</td> <td>25 – 50</td> </tr> <tr> <td>600 microns</td> <td>8 – 22</td> </tr> <tr> <td>75 microns</td> <td>0 – 10</td> </tr> </tbody> </table> <p>1.3 The particle size shall be determined by the washing and sieving method of BS 812: Part 103</p> <p>1.4 The material passing the 425 microns BS sieve shall be non-plastic as defined in BS 1377: Part 2 and tested in compliance therewith.</p> <p>(i) The degree of crushing of individual particles in the mixed material shall meet the following requirements:</p> <p>(ii) not less than 90 per cent by mass of the particles passing BS 50 millimetres and retained on BS 6.3 millimetre sieve shall exhibit at least three freshly broken faces; and</p> <p>(iii) not less than 80 per cent by mass of the particles in each BS 63 specified size fraction within the size range stated at (i) above shall exhibit at least three freshly broken faces.</p> <p>(iv) The material shall satisfy the minimum CBR requirement of Appendix 7/1 when tested in accordance with Clause 7 of BS 1377: Part 4. The material shall be tested at the density and moisture content likely to develop in equilibrium field conditions which shall be taken as being the density relating to the uniform air voids content of 5 per cent and the optimum moisture content determined in compliance with BS 5835. The specimens shall be tested in a soaked condition.</p> <p>(v) The material shall have a ten per cent fines value of 50</p> | BS sieve size | Percentage by mass passing | 75 millimetres | 100 | 37.5 millimetres | 85 – 100 | 10 millimetres | 40 – 70 | 5 millimetres | 25 – 50 | 600 microns | 8 – 22 | 75 microns | 0 – 10 |
| BS sieve size    | Percentage by mass passing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               |                            |                |     |                  |          |                |         |               |         |             |        |            |        |
| 75 millimetres   | 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |               |                            |                |     |                  |          |                |         |               |         |             |        |            |        |
| 37.5 millimetres | 85 – 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |                            |                |     |                  |          |                |         |               |         |             |        |            |        |
| 10 millimetres   | 40 – 70                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |                            |                |     |                  |          |                |         |               |         |             |        |            |        |
| 5 millimetres    | 25 – 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |                            |                |     |                  |          |                |         |               |         |             |        |            |        |
| 600 microns      | 8 – 22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               |                            |                |     |                  |          |                |         |               |         |             |        |            |        |
| 75 microns       | 0 – 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               |                            |                |     |                  |          |                |         |               |         |             |        |            |        |

**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | <p>kilonewtons or more when tested in compliance with BS 812 : Part 111 except that the samples shall be tested in a saturated and surface-dried condition. Prior to testing, the selected test portions shall be soaked in water at room temperature for 24 hours without previously having been oven-dried.</p> <p>1.5 The aggregate will be considered suitable if:</p> <p>(i) aggregate from the source, when tested in accordance with BS 812 : Part 121, has a soundness value greater than 65; or</p> <p>(ii) evidence can be provided to the Employer of satisfactory use of aggregate from the source as Type 1 sub-base material.</p> <p>1.5.1 The water absorption of the coarse aggregate from the source determined in accordance with BS 812: Part 2 shall also be declared.</p> <p>1.6 Transportation and Compaction</p> <p>1.6.1 The material shall be transported, laid and compacted to the requirements of Clause 801 at a moisture content within the range one per cent above to two per cent below the optimum moisture content determined in compliance with BS 5835 and without drying out or segregation.</p> <p>1.7 Trafficking Trial</p> <p>1.7.1 When required by Appendix 7/1, the Company shall construct a trial area incorporating the crushed gravel sub-base material proposed for use in the Works. The trial area shall be constructed, trafficked and assessed in accordance with the procedure described in Appendix 7/1. The mean vertical deformation after 1000 standard axles shall be less than 30 millimetres when measured in accordance with the stated procedure.</p> <p>1.8 Performance of Crushed gravel Sub-base</p> <p>1.8.1 A brief performance report on the behaviour of the crushed gravel sub-base is required.</p> |
| <b>1202TS</b> | <p><b>1 General Requirements for Permanent Traffic Signs</b></p> <p>1.1 Sub-Clause 1:<br/>Delete “described in Appendix 12/1” and insert “of the Contract”</p> <p>1.2 Sub-Clause 2:<br/>Delete “BS 873 : Part 1” and insert “BS EN 12899-1:2001<br/>And insert at the end of the paragraph<br/>“Additionally, unless protected by existing safety barriers signs shall be, by preference, designated as Passively Safe and shall therefore conform to testing as BSEN12767:2007, TD89/08 and be installed in compliance with TD19/06.”</p> <p>1.3 Sub-Clause 3:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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|               | <p>Delete whole sub-Clause text and insert<br/>                     “Sign panels of internally illuminated signs, transilluminated signs and luminaire face panels shall, comply with impact BS EN 12889-1:2001.”</p> <p>1.4 Sub-Clause 4:<br/>                     Delete “BS 873 : Part 5 unless otherwise described in Appendix 12/1” and insert “BS EN 12889-1:2001.”</p> <p>1.5 Sub-Clause 5:<br/>                     Delete “,unless otherwise described in Appendix 12/1,”<br/>                     And<br/>                     Delete “Contractor” and insert “Operating Company”</p> <p>1.6 Sub-Clause 6:<br/>                     Delete whole sub-Clause and insert<br/>                     “A traffic sign housing shall be provided with vandal and weather resistant locks. Keys shall be provided to the Contracting Authority, in the quantities stated in Appendix 12/1. Types of lock shall be kept to a minimum and shall be as described in Appendix 12/1.”</p> <p>1.7 Sub-Clause 7:<br/>                     Insert at the end of the paragraph<br/>                     “Illuminated traffic signs shall also be labelled in accordance with Transport Scotland (TS) Guidance Note LDS8001 ‘Roadside Electrical Apparatus and Lighting Identification System’. The identifying code shall be provided by the Operating Company responsible for the road. Contact details are provided in Appendix 12/1.</p> <p>1.8 Sub-Clause 8:<br/>                     Delete whole sub-Clause and insert<br/>                     “Traffic signs and poles shall at all times be handled, transported and stored in accordance with the manufacturers recommendations and be at all times adequately protected to prevent damage.”</p> |
| <b>1204TS</b> | <p><b>1 Posts for Permanent Traffic Signs</b></p> <p>1.1 Sub-Clause 1:<br/>                     Delete whole sub-Clause and insert<br/>                     “Posts for permanent traffic signs shall be as described in Appendix 12/1 and shall comply with BS EN 12899-1:2001. The surface protection requirements shall similarly comply with BS EN 12899-1:2001. Sign posts shall also conform to testing as BSEN12767:2007 and be installed in compliance with TD19/06 and the following:”</p> <p>1.2 Sub-Clause 1(ii):</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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|               | <p>Insert at the end of the paragraph<br/> “; lattice or other construction as agreed with the Overseeing Organisation. Such posts shall not include joints except at the sign head fixing”</p> <p>1.3 Sub-Clause 1(iii):<br/> Delete whole sub-Clause and insert<br/> “Concrete posts only to be used for special and specific applications. Such use shall be agreed with the Overseeing Organisation on a site by site basis.”</p> <p>1.4 Sub-Clause 2:<br/> Delete “a minimum” and insert “no greater than 50mm. Posts shall be fitted with suitable permanently affixed weatherproof cap of a type capable of providing watertight protection for a minimum of 20 years.</p> <p>1.5 Sub-Clause 3:<br/> Delete “BS 873 : Part 7” and insert “BS EN 12899-1:2001</p> |
| <b>1218TS</b> | <p><b>1 Detector Loops</b></p> <p>1.1 Sub-Clause 1:<br/> Insert after “with” the following<br/> “the Series 1500 National Alterations of the Overseeing Organisation of Scotland and the”</p> <p>1.2 Add the following sub-Clauses:<br/> “2. The positioning and layout of such loops shall, where applicable, be in accordance with MCH 1589 unless otherwise described in Appendix 12/1.”<br/> “3. Loops for use with Traffic Signals shall be installed in accordance with the requirements for such installations.”</p>                                                                                                                                                                                                                                             |
| <b>1301TS</b> | <p><b>1 General</b></p> <p>1.1 Sub-Clause 1:<br/> Delete whole Sub-Clause text and replace with:<br/> “This Series shall apply to the design, supply and installation of lighting columns and brackets and CCTV masts and cantilever masts for traffic signals and/or speed cameras (hereafter called cantilever masts) within the following dimensional limitations:<br/> a) For aluminium lighting columns:<br/> (i) aluminium columns shall not exceed 15 metres nominal height</p>                                                                                                                                                                                                                                                                                  |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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|               | <p>(ii) columns shall be tapered with an integral bracket. The maximum bracket outreach shall be no greater than 0.5 metres.</p> <p>b) For Steel Columns:</p> <p>(i) post top columns not exceeding 20 metres nominal height, these columns shall be of continuously tapered folded steel construction;</p> <p>(ii) columns with brackets not exceeding 18 metres nominal will have a maximum bracket outreach of 0.5 metres</p> <p>NOTE: Only where individual columns are being replaced within an existing lighting scheme will outreaches greater than 0.5 metres be accepted. Generally only to maintain consistency in such installations can columns other than tapered folded sheet steel be used. In these situations columns of a similar design to those in the existing lighting scheme can be used.</p> <p>c) For glass fibre reinforced plastic lighting columns:</p> <p>(i) Unless specified otherwise by the Overseeing Organisation columns not exceeding 10 metres nominal height.</p> <p>(ii) Bracket projections shall not exceed 0.5 metres.</p> <p>d) For Steel CCTV Masts:</p> <p>(i) post top masts not exceeding 25 metres nominal height.</p> <p>a) For steel cantilever masts:</p> <p>(i) nominal height not exceeding 8.5 metres;</p> <p>(ii) cantilever projection not exceeding 8.5 metres.</p> <p>(iii) bracket projections for cantilever masts not exceeding 0.25 x nominal height or 3 metres whichever is the lesser.</p> <p>f) For Hinged Columns:</p> <p>(i) Nominal height shall not exceed 12 metres,</p> <p>(ii) Bracket projections shall not exceed 0.5 metres,</p> <p>(iii) Where hinged columns greater than 8 metres high are installed these shall incorporate a suitable raising and lowering mechanism.</p> <p>For all new installations it is a requirement of the Overseeing Organisation that lighting columns shall be continuous taper, be manufactured from aluminium, the column root to be protected by an inner and outer polymer thermally bonded sheath to a height of 150mm from the bottom of the column, the columns to have an</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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|               | <p>integral 0.5 metre outreach and flush access doors. Sign support posts shall be of tubular aluminium or aluminium lattice construction.</p> <p>The nominal height of a flange column or mast is taken as the distance between the underside of the flange plate and the highest point of the mast. See Fig. 1. of BD88 (DMRB 2.2.13)”</p> <p>1.2 Insert additional Sub-Clause 8</p> <p>”Unless protected by an existing Vehicle Restraint System (“VRS”), columns shall be, designated Passively Safe or otherwise located so as to require no protection in accordance with TD19/06. Where passively safe columns are used they shall conform to testing as BSEN12767:2007. Installation shall always be in compliance with TD19/06.”</p> <p>1.3 Add Sub-Clause 9:</p> <p>“Non-hygroscopic base compartment back-board not less than 15mm thick and of a sufficient size to accept the selected cut-out shall be positioned internally opposite the access door. The baseboard shall be securely fixed to the inside of the column. All screws and fixings used for the attachment of equipment and components to this wooden back-board shall be of stainless steel.”</p> <p>1.4 Add Sub-Clause 10:</p> <p>”Lighting columns shall be manufactured with a flush mounted access door correctly positioned relative to with the integral bracket. This position ensures that access through the door can only take place when the operative is facing the oncoming traffic.”</p> <p>1.5 Add Sub-Clause 11:</p> <p>“The column cable entry slot, which shall be positioned on the face to the right of the column access door opening, shall have minimum dimensions of 150mm x 75mm with the lower edge of the slot 600mm below ground level. The cable entry slot shall be free from irregularities and burrs.”</p> <p>1.6 Add Sub-Clause 12:</p> <p>“Each column shall be fitted with an 8 mm (minimum) diameter earth terminal complete with two plain washers and one full nut and one locking nut. These items shall be corrosion resistant and compatible with the column material. Earth terminals shall be readily accessible through the door opening and located such as to minimise the risk of injury to persons accessing them while undertaking installation and maintenance.”</p> <p>1.7 Add Sub-Clause 13:</p> <p>“All electrical and similar joints made onto the column structural aluminium and column access door shall be such as to eliminate or protect against corrosion resulting from contact between dissimilar</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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|               | <p>metals. The Company is required to adhere to such aspects of the guidance provided in PD6484 as it relates to dissimilar metals in contact with aluminium. The selection of electrical earthing components shall also comply in this and other respects with the requirements of BS 7430. All access doors shall be fitted with chain or wire. Termination of the bonding earth conductor shall use components manufactured from compatible material.”</p>                                                                                                                                     |
| 1.8           | <p>Add Sub-Clause 14:</p> <p>“The flush fitting weatherproof single access door shall provide protection no less than IP33 and shall be free from any irregularities, burrs or sharp edges likely to cause injury. Unless specifically required by this Contract each column access door shall have at least one lock. All locks shall use a triangular type key. The number of column door keys to be supplied shall be 10% of the number of columns erected subject to a minimum of three keys. All column access door keys shall be manufactured from metal and be of an adequately size.”</p> |
| 1.9           | <p>Add Sub-Clause 15:</p> <p>“On completion of the installation, all door locking components shall be coated with suitable corrosion inhibitor grease providing lubrication and protection from seizure and general deterioration.”</p>                                                                                                                                                                                                                                                                                                                                                           |
| 1.10          | <p>Add Sub-Clause 16:</p> <p>“Lighting column access doors shall be retained by stainless steel chain or braided stainless steel wire. Such retaining chain or wire shall be compatible with the column material and be held captive by fixings similarly manufactured from compatible material. Chains shall be a minimum gauge of 4mm and be long enough to allow the column access door to be rested completely on the ground whilst removed. All removable access doors shall be interchangeable with access doors of similar columns without the need for adjustment.”</p>                   |
| 1.11          | <p>Add Sub-Clause 17:</p> <p>Where columns are mounted on structures and behind parapets, the access doors shall be positioned such that the access opening is fully accessible above the upper height of the protective parapet and facing the maintenance personnel.</p>                                                                                                                                                                                                                                                                                                                        |
| 1.12          | <p>Add Sub-Clause 18:</p> <p>Flange plate columns shall be set vertical on the foundation bases prepared for them. To ensure the column is set vertical compatible metal shims shall be used for adjustment. The nuts and exposed bolts shall be made suitably tight and then coated with protective paste and suitable protective tape. All fixings shall be compatible with the column material.”</p>                                                                                                                                                                                           |
| 1.13          | <p>Add Sub-Clause 19:</p> <p>“Where the column flange is not in accordance with BS EN 40-2 the</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

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| Clause Number        | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|                      | <p>Company shall liaise with the Contractor responsible and agree details of the flange sizes and fixing centres. The Operating Company shall implement a design based upon the agreed flange fixing and provide the design to the column manufacturer.”</p> <p>1.14 Add Sub-Clause 20:<br/>“Where separate bracket arms are used such bracket arms shall be of the same material as the column and fixed in accordance with the manufacturer’s written instructions to prevent rotation using an anti-rotational device.”</p> <p>1.15 Add Sub-Clause 21:<br/>“Road lighting columns and brackets shall be manufactured, located and erected in compliance with this Series, the 1400 Series and all relevant requirements.”</p> <p>1.16 Add Sub-Clause 22:<br/>“Where wall brackets and associated service boxes are installed they shall, where applicable, match existing items.”</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <p><b>1302TS</b></p> | <p><b>1 Design of Lighting Columns, Brackets, CCTV Masts, Cantilever Masts, Foundations, Anchorages and Attachment Systems</b></p> <p>1.1 Delete whole of Sub-Clause 1 and replace with:</p> <p>“Lighting columns, brackets, CCTV masts, cantilever masts, the foundations of both planted columns and columns and masts with flange plates, and the anchorages and attachment systems for columns and masts with flange plates shall be designed to comply with the requirements of Standards BD 94/07 of the DMRB and the technical approval scheme adopted by the Overseeing Organisation. The Company shall similarly comply with BS PD 6547:2004+A1:2009 and the referenced standards within it. The Operating Company shall use the soil type information as described in Appendix 13/1. The Operating Company shall design foundations for all columns and masts detailed in this Contract.</p> <p>The Company shall submit to the Overseeing Organisation a copy of all design calculations, variations, certification and supporting information at least two weeks prior to delivery and shall include with such records confirmation that such records have been checked by a competent person to ensure compliance with the required standards and check certificates issued for lighting columns, brackets, CCTV masts, cantilever masts and foundations. The design of the foundations shall be appropriate to the soil types encountered on site, as identified in Appendices 13/1, 13/4 and 13/7.</p> <p>The Company shall establish the soil types on site and submit, to the</p> |



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| <b>Clause Number</b> | <b>Title</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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|                      | <p>Overseeing Organisation for its acceptance, lighting column foundation details appropriate to the conditions found and in accordance with the requirements of BS EN 40.</p> <p>The excavation to accommodate planted root columns shall not exceed a diameter greater than twice the diameter of the column root. Where a separate bracket is used for compatibility with existing columns the column shall be erected without the bracket in place and placed centrally in the excavation. Where separate brackets are used these shall not be erected on the column until such a time as the foundations have cured.</p> <p>Alternative foundations can be used with the prior agreement of the Overseeing Organisation.”</p> <p>1.2 Aesthetic Requirements:<br/>Delete whole Sub-Clause 2 text and replace with<br/>“The aesthetic design of lighting columns, including those with bracket arms, shall be submitted by the Company to the Overseeing Organisation for consideration and approval. The design of lighting columns and luminaires including those with bracket arms shall comply with the general advice given in BS 5489-1 relating to the appearance of lighting installations both by day and by night both from the viewpoint of both the road and the surrounding neighbourhood. Where required to be incorporated into an existing scheme the lighting column silhouette must use the same or near similar bracket angle and generally be compatible with existing apparatus.”</p> |
| <b>1303TS</b>        | <p><b>1 Data Sheets</b></p> <p>1.1 Insert additional Sub-Clause 3:<br/>“The Company shall within one month of the commencement of the work and prior to placement of any orders for materials, submit to the Overseeing Organisation for approval, triplicate copies of completed Appendix 13/2 Data sheets for each type of lighting column.”</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>1304TS</b>        | <p><b>1 Identification and Location Markings</b></p> <p>1.1 Sub-Clause 1.<br/>Delete existing Sub-Clause 1 and replace with:<br/>“All lighting columns and brackets, CCTV masts and cantilever masts shall carry unique identification marks indicating the name of the manufacturer, year of manufacture, the unique product code and other relevant information to enable details of the lighting column and bracket, CCTV masts and cantilever masts to be determined by reference to the appropriate Lighting Column and Bracket, CCTV masts and cantilever masts Data Sheets. All such masts, columns and</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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|               | <p>brackets shall be correctly labelled with the CE mark confirming conformance with the appropriate directive(s)."</p> <p>“</p> <p>1.2 Sub-Clause 2:<br/>Delete whole Sub-clause text and replace with<br/>“The column and mast identification marks shall be permanent and legible and be made clearly visible in one of the following ways:<br/>(i) on a permanent fixed label; or<br/>(ii) hard stamped; or<br/>(iii) formed into the material of the column / mast external face only.<br/>For hard stamped identifiers, the mark shall be located immediately above the access door and for label identification this shall be placed immediately inside the base compartment: it shall not be located on the door.<br/>All hard stamping shall be carried out in a manner that will not induce any stresses into the material of the column / mast”</p> <p>1.3 Sub-Clause 3:<br/>Delete whole Sub-clause text and replace with<br/>“Where separate brackets are approved for use by the Overseeing Organisation the bracket identification mark shall also be permanent and legible and be either:<br/>(i) hard stamped; or<br/>(ii) formed into the material of the bracket arm and on either the luminaire spigot or the underside of the bracket arm adjacent to the column shaft or the wall or pole mounting plate. The mark will be on an external face only.”</p> <p>1.4 Sub-Clause 4:<br/>Delete whole Sub-Clause text and replace with<br/>“In addition, location / identification labels for compliance with DMRB requirements and electrical regulatory inspection and maintenance purposes shall be applied to each lighting column as described in the Overseeing Organisation guidance document LDS8001 A.2 Roadside Electrical Asset and Lighting Identification System. The identifying code for use on the labels shall be provided by the Company and agreed with the Overseeing Organisation. The Company shall provide the Overseeing Organisation with site design layout drawings and electrical schematics. All records relating to the lighting columns shall include this identifying code.”</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| 1308TS        | <p><b>1 Handling, Transport and Erection</b></p> <p>1.1 Sub-Clause 4:<br/>Delete whole sub-clause text and replace with<br/>“Columns and masts shall be installed in accordance with the manufacturer’s instructions and all requirements of the Specification.”</p> <p>1.2 Add Sub-Clause 6:<br/>“All verge located lighting columns shall be installed such that the door is facing away from the oncoming traffic. Alternative access door orientation must be agreed with the Overseeing Organisation. Where agreement for such alternative orientations is to be sought this must form part of the initially proposed project design.”</p> <p>1.3 Insert Additional Sub-Clause 7:<br/>“All proprietary materials shall be stored in accordance with the manufacturer’s written instructions.”</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 1401TS        | <p><b>1 General</b></p> <p>1.1 Sub- Clause 1:<br/>Insert additional new first paragraph to Sub-Clause 1:<br/>“The lighting installation shall not be operationally energised until the Company has complied with the Electricity at Work Regulations 1989 and provided to the Overseeing Organisation all completed BS7671 Inspection and Testing Certificates. In addition to the provision of the BS7671 Inspection and Testing Certificates the Company shall provide a written record to the Overseeing Organisation stating that these Certificates have been audited for correct and full completion by a resource competent to undertake such audits.”</p> <p>Delete existing first paragraph of Sub-Clause and replace with:<br/>Materials equipment and workmanship required under the Contract shall comply with BS 7671 Regulations for Electrical Installations (the IEE Wiring Regulations) and the applicable regulations of the Distribution Network Operator (DNO) providing the supply. The installation and maintenance of electrical apparatus and cabling for road lighting and illuminated traffic signs shall comply with the quality management scheme detailed in Appendix A Volume 1 of the MCHW. The Company shall incorporate into work procedures the contents of Engineering Recommendation G39/1 ‘Model Code of Practice covering Electrical Safety in the Planning, Installation, Commissioning and Maintenance of Public Lighting and Other Street Furniture’.”</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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|               | <p>Delete existing third paragraph of Sub-Clause 1 and replace with:</p> <p>“In addition to the requirements of Sub-Clauses 10.2 and 10.3 of G.39/1, each Competent Person as defined in G.39/1, Clause 2, shall be provided by the Company with not less than one copy of the above certificate, duly completed and signed as approved. Such certificate(s) shall be retained and be available at all times for inspection on request by the Overseeing Organisation. A formal work allocation record shall be kept by the Operating Company to enable work carried out by individual operatives and the responsible supervisor to be identified. All operatives and supervisors shall hold a valid Electrotechnical Certification Scheme (ECS) identity card. Notification of the details of all such cards shall be submitted to the Overseeing Organisation 14 days prior to commencement of the Works.</p> <p>Insert additional final paragraph to Sub-Clause 1:</p> <p>“The Company shall ensure that only competent persons as defined in the guidance note LDS8014_A.1_Competency – Competency requirements relating to work on Transport Scotland’s Roadside Electrical Assets and Lighting shall be employed on work that falls within the scope of this series. All competent persons shall be registered with the Highway Electrical Registration Scheme (HERS). In addition Authorised Persons shall be registered as specified in the "Highway Electrical Registration Scheme (HERS) Handbook.”</p> <p>1.2 Delete existing Sub-Clause 2(iv) and replace with:</p> <p>“ Electrical Equipment for Lighting Units shall consist of the following as described in this Contract: luminaires, photo-electric control units (PECUs), shorting plugs, lamps, time switches, ballasts, ignitors, starters, capacitors, cut-outs, fuses, fuse holders, miniature circuit breakers (MCBs) and Light Emitting Diode (LED) drivers.”</p> <p>Delete existing Sub-Clause 2(v) and replace with:</p> <p>“In this Series the "network" is the electrical distribution network from the DNO cut-out to the Lighting Units. This includes feeder pillars, cabinets, housings and similar enclosures that form part of the installed electrical distribution network.”</p> <p>1.3 Sub-Clause 3:</p> <p>Delete whole Sub-clause text and insert:</p> <p>“Each network shall operate on a nominal single phase 230V ac, - 6% to +10% or three phase 400V - 6% to +10% at a frequency of 50Hz ±1%. It will be the Company’s responsibility to ensure that the</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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|               | <p>equipment supplied will operate correctly at the voltage and frequency available at the point of use and ensure that the voltage at the point of use is within the requirements of the BS 7671 Regulations. The Company’s designer shall obtain a declaration from the DNO, provided in accordance with the Electricity Safety, Quality and Continuity Regulations in which the nominal voltage and frequency of the supply shall be specified along with the permitted tolerances. Further guidance on requesting electricity supplies is contained within LDS8006 A.1 Supply – Electricity Supplies to Roadside Electrical Assets and Lighting.</p> <p>TN-C distribution shall not be used for any part of any new road lighting electrical distribution network</p> <p>Only where a 3-phase supply is used to energise high mast lighting and similar loads shall a 3-phase supply be distributed within the lighting installation as 3-phase.</p> <p>Where a 3-phase supply has been provided by the DNO for circuits other than high mast lighting and similar the 3-phase supply shall, unless otherwise agreed with the Overseeing Organisation, not be distrucbuted as a 3-phase supply but only as three separate signle phase supplies.</p> <p>Such single phase supplies derived from a 3-phase supply shall not be considered as being an ‘individual’ or ‘separate’ single phase supplies.</p> <p>Unless specifically approved by the Overseeing Organisation lighting supplies shall not be used to supply equipment other than road lighting and related circuits.</p> <p>Road lighting circuit electricity consumption shall be considered as including maintenance sockets and similar items housed within lighting pillars.</p> <p>Unless specificall agreed with the Overseeing Organisation anti-condensation heaters shall not be fitted within pillars and distribution cabinets.”</p> <p>1.4 Sub-Clause 4:<br/>Delete whole Sub-Clause text and replace with:<br/>“The Company shall provide sufficient access and area within electrical equipment to allow the electricity supplier to install their service connection and associated cut-out. This shall be considered as the origin of the installation as defined in BS 7671. “</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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|               | <p>1.5 Sub-Clause 5:<br/>Delete whole Sub-clause text and replace with:<br/>“This dedicated feeder pillar shall be provided for the Overseeing Organisation’s lighting Network. Distribution feeder pillars shall be also be provided as required. Unless otherwise approved by the Overseeing Organisation supplies provided to electrical equipment for third parties, internal and external to the Overseeing Organisation, shall not be connected to the Overseeing Organisation’s Network. Any such supplies so provided shall conform to the Overseeing Organisation’s specific instructions as specified in the Overseeing Organisation guidance document LDS8006 A.1 Supply – Electricity Supplies to Roadside Electrical Assets and Lighting. Before making any form of electrical connection into any part of the Overseeing Organisation’s lighting Network approval shall be obtained from the Overseeing Organisation 21 days prior to the connection being made.</p> <p>1.6 Add Sub-Clause 6:<br/>“The Company shall fit ID labels and conspicuity bands in accordance with the Overseeing Organisation guidance document LDS8001 A.2 IDsys Roadside Electrical Asset and Lighting Identification System.”</p> |
| <b>1402TS</b> | <p><b>1 Site Records</b></p> <p>1.1 Sub- Clause 1:<br/>Delete whole Sub-Clause text and replace with<br/>“In accordance with the requirements of the Electricity at Work Regulations the Company shall, on the completion of the electrical work, provide a set of as-installed drawings or transparencies showing as a minimum the position and identification mark (including luminaire type, modification status, lamp setting, lamp type and serial numbers) of equipment requiring electrical connections, ducts, underground cables and joints and the type and depth of cables. The Company shall also supply test certificates and Operation and Maintenance manuals. The general requirement for information to be included within the lighting section of the health and safety file is contained within LDS8004 A.1 H&amp;SFiles – Roadside Electrical Assets and Lighting Health &amp; Safety File Requirements with Model Forms.”</p> <p>1.2 Sub-Clause 2<br/>Delete whole Sub-Clause text and replace with:</p>                                                                                                                                                                                                |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| 1.3           | <p>“The Company shall amend drawings provided by the Overseeing Organisation whenever any part of the installation shall be amended or extended. Test certificates pertaining to the part of the installation that has been modified shall be completed and passed to the Overseeing Organisation for approval. Locations of Constructional Plant and equipment shall be referenced in accordance with the Trunk Road Network Referencing System.”</p> <p>Sub-Clause 3:</p> <p>Delete whole Sub-Clause text and replace with</p> <p>“As built drawings shall be produced by the Company showing the network and all lighting units in accordance with this Clause. The Company shall complete the as-built drawings in AutoCAD™ format and provide them to the Overseeing Organisation.”</p> <p>As-built drawings shall include both geographical and schematic drawings:</p> <ul style="list-style-type: none"> <li>(i) a schematic distribution layout drawing indicating the distribution arrangement of each private cable network;</li> <li>(ii) a schedule of abandoned cables including location;</li> <li>(iii) duct and cable location offsets taken at 20 metre intervals where cables maintain a steady line, and at 5 metre intervals where the line of the cable varies. Cable records shall be determined from kerb lines or fence lines;</li> <li>(iv) the geographical and schematic drawing shall detail the ID label attached to pillars and lighting units. The geographical drawing shall detail the accurate location of all lighting units, duct location (including size and number), cable runs (including cable size), pillars, all chambers and the electricity supply location. The DNO ‘supply point ID No.’ must be obtained from the electricity supplier and included on the drawing. Column height, material lantern type, lamp wattage, Lit Sign Units TRGD ref. No, type and wattage of sign lighting unit shall be included on the drawing.”</li> </ul> <p>1.4 Sub-Clause 4:</p> <p>Delete whole Sub-Clause text and replace with</p> <p>“Operational Records shall include:</p> <ul style="list-style-type: none"> <li>(i) maintenance or operating manuals for installed equipment;</li> <li>(ii) inspection and test certificates in accordance with BS 7671;</li> <li>(iii) Data required for inventory purposes in the format stipulated in the Trunk Road Inventory Manual and the New Works Requirements.”</li> </ul> |

**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

| <b>Clause Number</b> | <b>Title</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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| <b>1403TS</b>        | <p><b>1 Location of Lighting Units and Feeder Pillars</b></p> <p>1.1 Sub-Clause 1.<br/>Delete whole Sub-Clause text and replace with<br/>“<br/>The location of feeder pillars shall be in accordance with the Company’s submitted design. The Company’s design shall fully consider all relevant requirements including inter alia such arrangements as to ensure safe maintenance access to the pillar. The exact location will be agreed on site before commencement of any related ground works. The Company shall be responsible for recording and documenting all aspects of the final site layout and the as-installed equipment.”</p> <p>Insert additional Sub-Clause 3<br/>“The location of cabinets or pillars provided to house the electricity supplier’s apparatus shall be agreed with the Overseeing Organisation prior to its installation.”</p> |
| <b>1407TS</b>        | <p><b>1 Luminaires</b></p> <p>1.1 Sub-Clause 1.<br/>Delete whole Sub-Clauses text and replace with<br/><br/>1. “Luminaires fitted with integral control gear shall have a fuse holder incorporating direct touch protection adjacent to the terminal block with a cartridge fuse protecting each set of control gear.”</p> <p>1.2 Sub-Clause 2<br/>Delete whole of Sub-Clause 2 and replace with:<br/><br/>“Luminaires for road lighting shall comply with BS EN 60598-2-3, andthe following;<br/><br/>(i) the mounting arrangement shall provide for a close fitting between the luminaire and the column, making use of a two or more bolt, fixing arrangement.<br/><br/>(ii) tilt angle adjustment shall be integral to the luminaire and shall apply to both top and side fixing arrangements. The adjustment</p>                                           |



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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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|               | <p>shall allow for a minimum of three tilt angles including 0deg. +5deg. and +10 degrees.</p> <p>(iii) the internal arrangement of the luminaire shall consist of separate control gear and lamp compartments. These compartments shall be arranged to provide for the separate sealing of the optical system (lamp housing) and control gear compartment. Both compartments shall have a degree of external sealing and sealing between each other no less than IP66.</p> <p>(iv) luminaire to be used for group control shall be fitted with a NEMA socket and this shall be located in the canopy. The control column shall be sited immediately adjacent to the control pillar and a PECU fitted into the NEMA socket.</p> <p>(v) meet the structural design and aesthetic approval requirements of Clause 1302. The external finish shall be to BS4800 RAL9007 Silver.</p> <p>(v) a range of luminaires of varying rating shall be available in a common style/design.</p> <p>(vii) curved glass shall be manufactured from toughened safety glass. Flat glass shall only be used in the vicinity of railways, airfields and navigable waterways or by agreement with the Overseeing Organisation. Luminaires shall be of the full-cut-off/low-threshold increment type as agreed with the Overseeing Organisation.</p> <p>(viii) electronic ballast units shall be provided in luminaires rated up to and including 400W and shall be suitable for operation over the input voltage range of 210-250 Volts. Electronic ballasts shall incorporate over-temperature protection and have a power factor of 0.95 (lagging/leading) or greater.</p> <p>Prior to delivery of any luminaire using electronic control gear the Overseeing Organisation shall be provided, by the supplier, with a 'statement of Compatibility'. This statement shall detail and confirm that the electronic control gear being supplied is capable of operating over the temperatures range to which it will be exposed in use within the luminaire housing and that the lamp and control gear are fully compatible. The 'Statement of Compatibility' shall describe the testing regime used to ensure</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|               | <p>such compatibility.</p> <p>Unless otherwise agreed with the Overseeing Organisation all lamp control gear shall comply with the following specification:</p> <ul style="list-style-type: none"> <li>(a) be of electronic type;</li> <li>(b) be DALI compatible, enabled and accredited;</li> <li>(c) capable of being controlled via a lighting central management system;</li> <li>(d) capable of implementing set dimming/trimming control regimes autonomously, and</li> <li>(e) ELEXON Approved.</li> <li>(ix) ballast units shall have a power factor no less than 0.85.</li> <li>(x) luminaires shall incorporate some form of anti-condensation vent or similar measures to minimise moisture build-up within the luminaire.</li> <li>(xi) all luminaires shall operate correctly over the temperature range of -20deg. C to +35deg. C.</li> <li>(xii) luminaires may be:                     <ul style="list-style-type: none"> <li>Class I where the luminaire has an integral earth terminal linked to all exposed metalwork.</li> <li>Or</li> <li>Class II where there is no earth terminal provided for connection of the luminaire's exposed metalwork to the circuit protective conductor.</li> <li>Fortuitous earth connection provided by connection to mechanical fixings shall not be relied upon.</li> </ul> </li> </ul> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|               | <p>(xii) safe access to the lamp and control gear enclosures for maintenance purposes shall require a tool. Doors shall be hinged and include a safety catch.</p> <p>(xiii) luminaire housings shall be manufactured from corrosion resistant die-cast aluminium suitable for use in their intended environments including locations directly adjacent to the sea and similar salt-laden locations.</p> <p>(xiv) Any electrical wiring that could be subjected to heat shall be fitted with additional heat insulating sleeving.</p> <p>(xv) Luminaires with remote control gear shall not be used unless previously agreed with the Overseeing Organisation</p> <p>(xvi) Luminaires shall conform to the requirements of the appropriate sections of the ROHS and WEEE Regulations.</p> <p>1.3 Sub-Clause 3<br/>Delete whole Sub-Clause and replace with:</p> <p>“Traffic sign luminaires shall comply with BS 873-5 and comply with the following:</p> <p>(i) luminaires shall use low energy, high efficiency lamps with electronic control gear.</p> <p>(ii) traffic sign luminaires shall be manufactured from cast aluminium unless otherwise specified.</p> <p>(iii) the external finish shall be to BS4800 RAL7000. External sealing shall be to no less than IP54. The construction shall be suitable for use in all environments including directly adjacent to the sea at ferry terminals and in similar salt-laden locations.</p> <p>(iv) for overhung illumination of a sign:</p> <p>(a) the mounting arrangement of the luminaire(s) shall incorporate a vandal and wind loading resistant anti-rotational support fixing capable of accommodating all commonly used post diameters.</p> <p>(b) the sign lighting luminaire(s) shall provide efficient</p> |

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| Clause Number        | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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|                      | <p>illumination of the sign.</p> <p>(c) all luminaires shall include integral control gear which shall be mounted on a single readily removable tray.</p> <p>(d) suitable arrangements must be incorporated to prevent un-necessary light spillage.</p> <p>(v) for up-lighter illumination of a sign:</p> <p>(a) the mounting arrangement of the luminaire(s) shall incorporate a vandal and wind loading resistant anti-rotational support.</p> <p>(b) the sign lighting luminaire(s) shall provide efficient illumination of the sign.</p> <p>(c) all luminaires shall include integral control gear.</p> <p>(d) suitable arrangements must be incorporated to prevent un-necessary light spillage.</p> <p>(vi) For internally illuminated 'light box' and electroluminescence signs, the signs shall conform to all applicable standards in relation to their use including background light intensity.</p> <p>(vii) access doors into lamp and control gear compartments on all luminaire types shall be hinged and tamperproof.</p> <p>(viii) the mean sign luminance shall be Category I of BS 873-5 and use high efficiency lamp(s).</p> <p>(ix) the impact strength shall be Category 1 of BS 873-5.</p> <p>(x) sign lighting luminaires shall conform to the requirements of the appropriate sections of the ROHS and WEEE Regulations."</p> |
| <p><b>1409TS</b></p> | <p><b>1 Photo-electric Control Units (PECUs)</b></p> <p>1.1 Sub-Clauses 1.<br/>Delete whole Sub-Clause text and replace with<br/>"Photo-electric control units (PECUs) shall comply with BS 5972: 1980 and BS EN 60068 for vibration and certified to EN 50081-1 EMC Emissions and to EN 50082-1. The PECU shall incorporate synchronous switching technology and be of one-part construction."</p> <p>1.2 Sub-Clause 2<br/>Delete Sub-Clause 2(i) and replace with:<br/>"be factory fitted in NEMA socket and secured as appropriate to the</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|               | <p>road lighting luminaire canopy.”</p> <p>Insert additional Sub-Clauses in Sub-Clause 2:</p> <ul style="list-style-type: none"> <li>(vi) be protected against mains borne surges and spikes;</li> <li>(vii) be of electronic type with a switching level of 70 lux with switching differential ratio of 1:0.5 negative. The photoelectric sensor shall have zero sensor shift over a five year period;</li> <li>(viii) have a power consumption of no more than 0.25 watts with a uniform operating temperature range of –25 degrees Celsius to +50 degrees Celsius;</li> <li>(ix) be able to switch a continuously rectified circuit of less than 20 watts where used to control contactors;</li> <li>(x) date stamped and have a manufacturer’s guarantee of at least 6 years; and</li> <li>(xi) be designed so that in the event of a fault occurring in the unit they fail in the ON position.”</li> </ul> <p>1.3 Sub-Clause 3</p> <p>Delete existing Sub-Clause and replace with:</p> <p>“Single and multi-bracket lighting circuits shall be group switched under the control of the group PECU. Such control shall include provision for remotely switched or time switched lighting control.”</p> |
| 1412TS        | <p><b>1 Ballasts</b></p> <p>1.1 Sub-Clause 1</p> <p>Delete whole Sub-Clause text and replace with:</p> <p>“Ballasts and other lamp control gear, including LED lamp drivers shall be electronic and comply with Clauses 1407. Ballasts shall comply with BS EN 61347-1, BS EN 61347-2-1, BS EN 61347-2-8, BS EN 61347-2-9 and BS EN 60921 or BS EN 60923 as appropriate and be tap selected to the specified operating voltage of the network. Lantern control gear shall be rated at 300volts and thermally protected with super imposed pulse ignitor.</p> <p>Electronic ballasts and LED Driver circuits shall be capable of operating over a range of input voltages 210-250 Volts without any form of tap selection.</p> <p>The terminals shall be indelibly marked to indicate all wiring connections and operating voltages.”</p>                                                                                                                                                                                                                                                                                                                                                                   |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| 1416TS        | <p><b>1 Cut-outs, Fuse Holders, Fuses and Miniature Circuit Breakers (MCBs)</b></p> <p>1.1 Delete Sub-Clause 1<br/>Delete whole Sub-Clause text and replace with:<br/>“Cut-outs, fuse holders and MCBs shall have moulded plastic drip-proof housing to IP34 or above. This requirement applies to the device when installed in a normal operational orientation and fully assembled.</p> <p>1.2 Sub-Clause 2<br/>Delete whole Sub-Clause text and replace with:<br/>“All single phase road lighting cut-outs shall be BS 7654 and double-pole ensuring both phase and neutral is broken by the removal of the fuse carrier. An earth terminal shall be provided within the cut-out enclosure. The continuity of any earth path shall not be broken by the removal of the cut-out fuse carrier.”</p> <p>1.3 Sub-Clause 3<br/>Delete whole Sub-Clause text and replace with:<br/>“Terminals shall be sufficient for the conductors. They shall be clearly labelled to differentiate circuits and phases.”</p> <p>1.4 Sub-Clause 4<br/>Delete whole Sub-Clause text and replace with:<br/>“When fuses are intended to be used as isolating devices, no special tools shall be necessary to extract the fuse from its carrier to achieve disconnection. However some method of then securing the device in the disconnected (OFF) condition must be provided. To achieve full isolation the fuse carrier shall incorporate the means of neutral disconnection.”</p> <p>1.5 Sub-Clause 5<br/>Delete whole Sub-Clause text and replace with:<br/>“Fuse links shall comply with the requirements of BS EN 60269-1, BS 88-2, BS 646/BS 2950, or BS 88-3. They shall be of high rupture capacity (HRC) type and be of a rating as specified in Sub-Clause 11 below.</p> <p>1.6 Sub-Clause 6</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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|               | <p>Delete whole Sub-Clause text and replace with:</p> <p>“Miniature circuit breakers shall be in accordance with BS EN 60898 and unless agreed with the Overseeing Organisation be the preferred method of circuit protection. Miniature circuit breakers shall be suitable for use on the specified operating voltage of the network at single or three phase as appropriate. Their short circuit current rating shall be no less than 10KA.. The Company shall ensure by enquiry of the DNO that the prospective short circuit current rating of the supply is no greater than 16KA. Thermal or magnetic overcurrent tripping devices shall be provided with a mechanism to ensure that the contact cannot be held closed against a fault. Circuits shall be designed such that devices are operated within the ratings specified by the manufacturer.”</p> |
| 1.7           | <p>Insert Addition Sub-Clause 8:</p> <p>“The cut-out gland plates shall be an integral part of the cut-out and be capable of terminating XLPE/PVC SWA cables up to 25mm sq and have the capacity for looping in-out. The gland plate shall typically accommodate up to 3 cables however additional armoured cable termination and cut-out capacity shall be provided at multi-headed columns, at columns where the group PECU is fitted and at locations where spur supplies are provided.”</p>                                                                                                                                                                                                                                                                                                                                                               |
| 1.8           | <p>Insert additional Sub-Clause 9:</p> <p>“At columns fitted with more than one luminaire, each luminaire shall be wired and fused separately, however all cut-out fuse carriers shall be arranged to be withdrawn as one. Where a PECU is fitted to any of the luminaires, the cut-out for that luminaire shall also carry the fuse for the PECU and provide simultaneous isolation of both PECU and luminaire. Each cut-out fuse carrier shall be clearly marked indicating the luminaire or device that it protects.”</p>                                                                                                                                                                                                                                                                                                                                  |
| 1.9           | <p>Insert additional Sub-Clause 10:</p> <p>“The design of the cut-out shall be such that it is possible to incorporate facilities, integral within the unit, to feed additional spur(s) to sundry equipment such as lit bollards and signs. The supply to each spur shall have its own dedicated circuit protection and be individually isolated by a separate fused cut-out. Spur supplies will be protected using a dedicated fuse carrier allowing the supply to be individually isolated. Where spurs are required for supplies to third parties then reference should also be made to Cl. 1401S.6.”</p>                                                                                                                                                                                                                                                  |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                |             |                 |             |                  |
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|               | <p>1.10 Insert additional Sub-Clause 11:<br/>           “The design of the cut-out shall be such that when the fuse carrier / neutral link is removed no live parts are accessible i.e. have a minimum rating of IP2X. Any protective cover exposed by the removal of the fuse link shall be designed so it cannot be separated from the main housing without the use of a key or tool.”</p> <p>1.11 Insert additional Sub-Clause 12<br/>           “Circuit protection on lamp circuits shall be provided by high rupturing capacity (HRC) fused links complying with BS 88 category of duty 300 AC 16 rating Q1 and shall be rated to suit the lamp circuit type.<br/>           Typical fuse rating for High pressure sodium and Metal Halide lamp types are:</p> <table> <tr> <td>6 amps for</td> <td>70 – 150 watts</td> </tr> <tr> <td>10 amps for</td> <td>151 – 250 watts</td> </tr> <tr> <td>16 amps for</td> <td>251 – 400 watts”</td> </tr> </table> | 6 amps for | 70 – 150 watts | 10 amps for | 151 – 250 watts | 16 amps for | 251 – 400 watts” |
| 6 amps for    | 70 – 150 watts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |                |             |                 |             |                  |
| 10 amps for   | 151 – 250 watts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |                |             |                 |             |                  |
| 16 amps for   | 251 – 400 watts”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |                |             |                 |             |                  |
| 1417TS        | <p><b>1 Base Compartment Fixing Arrangements</b></p> <p>1.1 Sub-Clause 1.<br/>           Delete whole Sub-Clause text and replace with<br/>           “Electrical equipment described in Clauses 1411 to 1416 installed within the base compartment of columns or posts shall be fixed in accordance with manufacturers’ instructions with corrosion resistant fixing screws.”</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                |             |                 |             |                  |
| 1418TS        | <p><b>1 Feeder Pillars</b></p> <p>1.1 Sub-Clause 1<br/>           :<br/>           Delete whole Sub-Clause text and replace with:<br/>           “Feeder pillars, forming part of a road lighting installation, are required to:</p> <ul style="list-style-type: none"> <li>(i) house the DNO service connection facilities;</li> <li>(ii) provide the electrical distribution to individual circuits and their associated circuit protection; and</li> <li>(iii) provide circuit energisation under the control PECUs or time-clocks. Where time-clocks are used these shall be housed within the feeder pillars. PECUs shall be mounted on an</li> </ul>                                                                                                                                                                                                                                                                                                                                    |            |                |             |                 |             |                  |



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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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|               | <p style="text-align: center;">immediately adjacent column or post.</p> <p>Lighting feeder pillars shall be used to fhte energising of the lighting equipment and associated electrical circuits only.</p> <p>All equipment fitted within the feeder pillars shall be securely fixed to the back board.</p> <p>The enclosure shall be adequately ventilated by a suitable method preventing the ingress of water, snow or foreign bodies.</p> <p>The feeder pillars shall carry a nameplate showing the manufacturer's name or trade mark and the type of designation or identificaction number of the product.</p> <p>1.2 Sub-Clause 2</p> <p>Insert the following additional sentence at the end of Sub-Clause 2:</p> <p style="padding-left: 40px;">"All MCBs, fuses, isolators, switches, contactors, but-bars and similar parts shall be clearly identified by correctly fitted permanent labels."</p> <p>1.3 Sub-Clause 3</p> <p>Delete existing Sub-Clause 3 and replace with:</p> <p style="padding-left: 40px;">"The feeder pillar shall be fitted with a suitably rated single or 3-phase and neutral switch disconnecter/isolator and the circuit fused in accordance with BS7671 using fuses to BS 88 rated as appropriate for the consumer circuits. "</p> <p>1.4 Sub-Clause 4</p> <p>Delete existing Sub-Clause and replace with:</p> <p style="padding-left: 40px;">"The external pillar door locking shall be by means of tamperproof wedge type locks, with the actuator protected by plastic sealing plugs. Two sets of keys are to be provided per feeder pillar. The locks shall be fitted with triangular actuators operated by a single key. All hinges and locks shall be of stainless steel unless otherwise agreed with the Overseeing Organisation. Door locks on the wedge side should have a generous application of suitable inhibitor grease applied when installed to inhibit the effects of moisture and corrosion/rust.</p> <p style="padding-left: 40px;">Access to the external enclosure shall be by means of close fitting hinged door(s) opening to a full 180 degrees at the front. Hinges shall be of stainless steel construction or similar approved materials. Means shall be provided to secure the door(s) in the open condition during maintenance visits.</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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|               | <p>The door frame shall be fitted with a heavy duty non-perishable gasket to provide a minimum rating of protection against ingress of foreign materials of IP54."</p>                                                                                                                                                                                                                                                                                                                                                                  |
| 1.5           | <p>Sub-Clause 5</p> <p>Delete existing Sub-Clause and replace with:</p> <p>"Feeder pillar distribution boards shall be provided with an external earth, be phase barriered and correctly colour coded. They shall be fitted with the same number of live and neutral bus-bar terminals as there are outgoing circuits plus at least one spare way. The main earthing terminal in each feeder pillar shall be connected to earth in accordance with BS 7671 and BS 7430.</p>                                                             |
| 1.6           | <p>Sub-Clause 6</p> <p>Delete existing Sub-Clause and replace with:</p> <p>"Circuit details and labelling shall be provided in each feeder pillar.</p> <p>The details/diagram shall be laminated or similarly protected from moisture and held in a purpose made pocket attached to the inner face of the pillar door. The electrical details must include a circuit schematic."</p>                                                                                                                                                    |
| 1.7           | <p>Sub-Clause 7</p> <p>Delete existing Sub-Clause and replace with:</p> <p>"The main earthing terminal in each feeder pillar shall be connected to earth."</p>                                                                                                                                                                                                                                                                                                                                                                          |
| 1.8           | <p>Sub-Clause 8</p> <p>Delete existing Sub-Clause and replace with:</p> <p>"Feeder pillars shall be mounted on a 150 mm thick foundation of ST2 concrete in compliance with Clause 2602.</p> <p>However, where special ground conditions exist the foundations shall be adjusted to accommodate such conditions. Foundations for pillars considered as 'Passively Safe' shall be constructed in accordance with all specific guidance for such pillars. Such pillars will typically have larger foundations than normally required.</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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|               | <p>After completion of the cabling the feeder pillar base shall be filled to 25 mm below the door with pea gravel conforming with Table 2 of BS EN 12620, 4/14 aggregate with a grading category of GC90/15. Prior to the addition of pea gravel all duct ends entering the pillar shall be cut back no greater than 25mm below the finished level of the infill. Under no circumstances shall sharp gravel be used. Prior to the addition of the pea gravel the duct ends shall be completely sealed with expanded foam. “</p> <p>1.9 Sub-Clause 9<br/>Delete existing Sub-Clause 9 and replace with:</p> <p>“A durable warning sign indication ‘Danger 400 Volts’ or ‘Danger 230 Volts’ shall be fixed to the front of the feeder pillar door and the inner panel door where applicable to comply with the Health and safety (Safety Signs &amp; Signals) Regulations and the Electricity at Work regulations. In compliance with these regulations these warning labels shall be triangular and no less than 75mm high.”</p> <p>1.10 Insert additional Sub-Clause 10:<br/>“Where a feeder pillar is erected on a grass verge, an area of hard standing of minimum size 900x600mm shall be provided. The hard standing shall be set into the ground at a level such as to allow grass cutting to be readily undertaken.”</p> <p>1.11 Insert additional Sub-Clause 11:<br/>"All ducts leaving the root of the pillar shall extend beyond the immediate concrete foundation of the pillar. A separate black duct shall be provided for the supply authority's incoming cable."</p> <p>1.12 Insert additional Sub-Clause 12:<br/>"The bonding conductor cross-sectional area for all lighting feeder pillars shall be not less than 10 mm<sup>2</sup> Tri-rated."</p> <p>1.13 Insert additional Sub-Clause 13:<br/><br/>“The inner enclosure should contain the following apparatus;</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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|               | <ul style="list-style-type: none"> <li>(i) A single phase double pole / 3 phase &amp; neutral isolator to BS5419.</li> <li>(ii) A single phase single pole/3-phase contactor rated at BS 5424.</li> <li>(iii) A push button operated test switch accessible from within the outer enclosure and providing a timed over-ride of the photocell.</li> <li>(iv) A DIN rail fitted with BS EN 60898 miniature circuit breakers/ Modular fuse holders fitted with fuses to BS 88-2.1. The control circuit fuse shall normally be rated at 6 Amp with any spare output circuit fuses rated at 20 Amp, unless agreed with the Overseeing Organisation.</li> <li>(v) A neutral rail and an earth rail to accept the installed wiring with at least one spare termination provided on each rail.</li> </ul> <p>Note: within the inner enclosure all electrical apparatus shall be shrouded to a minimum of IP2X including the neutral rail and all neutral connections/terminals.”</p>                          |
| <b>1419TS</b> | <p><b>1 Wiring</b></p> <p>1.1 Sub-Clause 1.<br/>Delete whole Sub-Clauses text and replace with:<br/>“All wiring and installation of components within the column, post, lit sign unit, bollard or pillar shall be as described in this Agreement.</p> <p>1.2 Sub-Clause 2<br/>Delete existing Sub-Clause and replace with:<br/>“The wiring between the luminaire and the components in the base of the column or sign unit shall be PVC insulated ‘arctic grade’, 3-core 2.5mm sq. flexible cable with blue sheath. This cable shall generally be to BS6500 and be suitable for use over the temperature range –20 to +70 deg. C. The circuit protective conductor within this cable shall connect the earth terminal on the luminaire to the main earth terminal associated with the column cut-out in the base compartment.</p> <p>Under no circumstances shall domestic grade flat ‘Twin and earth’ cable be used for any purpose within road lighting installations.”</p> <p>1.3 Sub-Clause 5</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|               | <p>Delete existing Sub-Clause and replace with:</p> <p>“All wiring/cables shall be correctly colour coded throughout their length and labelled appropriately at all points of termination.</p> <p>The Company shall comply with BS7671:2008 with regard to harmonized wiring colours and the warning notices required should ‘old’ and “harmonized” wiring colours form part of a single installation.”</p>                                                                                                                                |
| 1.4           | <p>Insert the following additional sentence at the end of Sub-Clause 6:</p> <p>"Correctly selected and fitted plastic glands shall protect and seal all cable penetrations."</p>                                                                                                                                                                                                                                                                                                                                                           |
| 1.5           | <p>Sub-Clause 7</p> <p>Delete existing Sub-Clause and replace with:</p> <p>“Under no circumstances shall wiring, cables and cable tails come into direct contact with the inner surfaces of access doors or be located adjacent to hinges, sharp metal edges, fixing screws or similar items. Installers shall, at all times ensure that conductor insulation is protected from being penetrated, cut, abraded, or crushed or in any other way physically damaged as a result of contact with such items.”</p>                             |
| 1.6           | <p>Sub-Clause 8</p> <p>Delete existing Sub-Clause and replace with:</p> <p>"Wiring shall, wherever possible, be housed inside columns, wall brackets and posts or stiffening members. Where it is external it shall be secured using appropriate methods and in accordance with BS 7671. Connections between conduit and sign housings, switchboxes and other components shall be sealed to no less than IP66. Internal surfaces in contact with such cables shall be smooth. Only plastic conduit, rigid or flexible, shall be used."</p> |
| 1.7           | <p>Sub-Clause 9</p> <p>Delete existing Sub-Clause and replace with:</p> <p>“All unused cores shall be cut to a suitable length for safe, unobtrusive</p>                                                                                                                                                                                                                                                                                                                                                                                   |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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|               | stowage and the ends sealed and insulated.”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>1420TS</b> | <p><b>1 Earthing</b></p> <p>1.1 Sub-Clause 1</p> <p>Delete whole Sub-Clause text and replace with</p> <p>“Circuit protective and equipotential bonding conductors shall be installed in accordance with BS7671 and BS7430 and shall be green/yellow PVC or XLPE insulated or sleeved. Where bolted connections are required, these shall be terminated in accordance with manufacturers' instructions in correctly sized purpose made lugs. Such connections shall be made using brass or stainless steel or other compatible non-ferrous nuts, bolts and washers”</p> <p>1.2 Sub-Clause 3</p> <p>Delete existing Sub-Clause and replace with:</p> <p>“A separate circuit bonding conductor not less than 10mm sq. cross-sectional area shall connect the earth terminal of the luminaire to the adjacent earth stud of the column/bracket.”</p> <p>1.3 Sub-Clause 4</p> <p>Delete existing Sub-Clause and replace with:</p> <p>“All extraneous conductive parts, as described in BS 7671, and including doors to feeder pillars, lighting columns and lit sign units, shall be bonded to the main earth terminal using an equipotential bonding conductor of 10mm' cross-sectional area. When the earth conductor forms part of a 3-core cable the equipotential bonding conductor can be reduced to a size equal to the other cores but not less than 2.5 mm sq. cross-sectional area. Earthing of lighting equipment in general and the design and installation of earth electrodes in particular shall all be in accordance with BS7674 and BS7430.”</p> <p>Insert the following additional Sub-Clause 6:</p> <p>“Where lighting pillars, columns, signs are adjacent to the same or separately supplied electrical equipment i.e. equipmenet fed from different electrical supply pillar and these are located within 3 metres of each other, then they shall be</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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|               | <p>bonded together in accordance with BS7671 Reg. 411.3.1. However in accordance with BS7671 Reg. 559.10.3.1(v) bonding is not required to adjacent metallic structures such as safety fences, handrails and similar except that where lightning protection is to be provided the bonding shall satisfy BS EN 62305.</p> <p>No Lighting infrastructure equipment shall be located within 5 metres of metallic conductive parts forming part of a separately supplied electrical equipment, such as Traffic Scotland and similar equipment. Bonding between the metal parts of such apparatus is specifically excluded by this note in accordance with BS7671 Reg. 542.1.3-8</p> <p>Where an electrical supply is required to permanently power third party equipment located at the same Site then this shall be accommodated through the provision of a separate feeder pillar housing, with its own electricity suppliers cut-out. If this second housing is located within 3 metres of a road lighting pillar then the two pillars shall be bonded together in accordance with BS7671 Reg. 411.3.1”</p> <p>1.4           Insert the following additional Sub-Clause 7:</p> <p>                  “The main earthing conductor within the feeder pillar shall be of copper and be of a size no less than the supplier’s phase conductor. Where the supplier’s phase conductor is greater than 16 mm sq. the main earth conductor is 16mm sq. The main earth conductor shall connect the main earthing terminal to the incoming supply earth.</p> <p>                  Under no circumstances shall fortuitous contact via mechanical fixings be relied upon as a conductive path in place of a specific, correctly selected, rated, terminated and installed earthing conductor.</p> <p>                  Crimp connections for earth conductors shall meet the performance criteria suggested in BS 7609 using a matching tool, die set and connector. i.e. the first and second barrels shall crimp the conductor, the third set shall crimp the insulating, and facilitating stress relief and</p> |

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|               | <p style="text-align: right;">allowing for increased movement of the conductor. All bolted earth connection shall be made between two plain washers manufactured using material compatible with the apparatus metalwork.”</p> <p>1.5      Inset the following additional Sub-Clause 8:</p> <p style="padding-left: 40px;">“Earth electrodes shall be fitted to all lighting electrical installations both adjacent to the electricity supply pillar and at the end of each circuit. The acceptable resistance to earth of these electrodes shall be selected in accordance with the requirements of BS7671 and BS7430. Unless lightning protection is required typical values are likely to be no greater than 20 ohm for each individual electrode used as part of a TN-S circuit. For circuits energised by TN-C-S type electricity supply the typical electrode resistance to earth shall be as specified in Table 9.3 of BS7671 Guidance Note 5 where the circuit wattage sets the maximum resistance allowed. Lightning protection typically requires electrode resistances below 10 ohms. For the avoidance of doubt the electrode resistance values referred to above are provided for guidance only and must be confirmed by the designer before use. “</p> <p>1.6      Inset the following additional Sub-Clause 9</p> <p style="padding-left: 40px;">“Where there are exposed metal casings of capacitors/ignitors these shall be directly connected to earth. Reliance on the earthing of security clips shall not be acceptable. All bonding conductors shall terminate at a common point.”</p> |
| 1421TS        | <p><b>1      Underground and Ducted Cable</b></p> <p>1.1      Sub-Clause 1:<br/>            Insert “purple” prior to “XLPE” in first sentence.</p> <p>1.2      Sub-Clause 2:</p> <p>1.3      Insert “purple” following “self Coloured” in first sentence. Sub-Clause 3:<br/>            Delete whole Sub-Clause text and replace with:<br/>            “Cable covers for protection of underground cables shall comply with BS 2484 and shall be installed as described in Appendix 14/4. When cable covers are installed, marker tapes are not required.”</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |



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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|               | <p>1.4 Sub-Clause 4:<br/>Delete whole Sub-Clause text and replace with:<br/>"Cable trenches shall be excavated to the lines described and in accordance with clause 602. The depth of excavation shall be such that cables laid under verges, footways or open ground shall have a minimum cover of 500 mm and under carriageways of 750 mm or 300 mm below formation whichever is the greater depth."</p> <p>1.5 Sub-Clause 5:<br/>Delete whole Sub-Clause text and replace with:<br/>"Cables shall be laid without sharp bends and kinks. If required, additional protection and support shall be provided as required."</p> <p>1.6 Sub-Clause 8:<br/>Delete whole Sub-Clause text and replace with:<br/>"Electrical supply cables shall not be installed within 500 mm of signal, communication or telecommunication cables or within 300 mm of HV cables." Sub-Clause 9:<br/>In Sub-Clause 9 insert "on a rising thermometer" following "0°C" in first sentence.</p> <p>1.7 Sub-clause 11:<br/>Delete whole Sub-Clause text and replace with:<br/>"Sufficient length of cable shall be allowed for its termination. When termination does not proceed immediately following the installation of the cable, its end shall be sealed against the ingress of moisture. If such cable ends are buried, their positions shall be marked with a permanent marker block consisting of a 300 mm square x 225 mm deep precast concrete block having a mark indented into its top surface and recorded on the Site Records."</p> <p>1.8 Sub-Clause 14:<br/>Delete whole Sub-Clause text and replace with:<br/>"Metallic trace marker tape shall be laid above the duct or cable to permit cable detection by electronic route tracing equipment, this shall be purple self-coloured PVC or polythene plastic tape for cable marking and shall be laid approximately 250 mm above any electrical supply/distribution cable. The tape shall be not less than 0.1 mm thick and 150 mm wide with the wording "Street Lighting Cables Below" printed in black along the full length so as to occupy not less than 75% of its available length and occurring at least at 1 m intervals. Where several cables are laid in one trench, only one line of marker tape need</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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|               | <p>be installed."</p> <p>1.9 Insert the following additional Sub-Clause 20:<br/>"Cable laid in troughs shall not be used."</p> <p>1.10 Sub-clause 21:<br/>Delete whole Sub-Clause text and replace with:<br/>"Only steel wire armour cabling shall be used underground for lighting supply distribution. All cabling shall be purple in colour and installed within continuous purple self-coloured ducts in accordance with Cl. 1421.15. Straight or split-concentric cable shall not be used as part of any lighting installation. Direct buried cables shall not be installed."</p> <p>1.11 Insert the following additional Sub-Clause 22 :<br/>"Under no circumstances shall cables enter a column, post, bollard or pillar base without the protection of ducting typically 60mm diameter. Such ducts shall continue into the base and terminate at a suitable height to allow a seal to be formed using expanded foam sealant or similar."</p> <p>1.7 Insert the following additional Sub-Clause 23:<br/>"When laid in carriageways, road lighting service ducts shall be twin walled high density polypropylene with smooth bore of 150mm in internal diameter to BS EN 50086-2-4, purple in colour and printed "STREET LIGHTING" at intervals of not more than one metre lettering throughout out its length. A minimum cover of 450mm shall be provided."</p> <p>1.8 Insert the following additional Sub-Clause 24:<br/>"Cable duct laid under carriageways shall consist of 2 No. 150mm ducts and having a minimum cover of 750mm and shall be protected by concrete surround of mix ST2 concrete or similar as directed by the Overseeing Organisation. The ducts shall be twin walled high density polypropylene with smooth bore of 150mm in internal diameter to BS EN 50086-2-4, purple in colour and printed "STREET LIGHTING" at intervals of not more than one metre lettering throughout out its length and shall terminate in an underground draw-in chamber at each side of the carriageway."</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|               | <p>1.9 Insert the following additional Sub-Clause 25:<br/>           “When laid in verges and footways, road lighting service ducts shall be twin walled high density polypropylene with smooth bore of 100mm in internal diameter to BS EN 50086-2-4, purple in colour and printed “STREET LIGHTING” lettering at intervals of not more than one metre throughout out its length. A minimum cover of 650mm shall be provided.”</p> <p>1.10 Insert the following additional Sub-Clause 26:<br/>           “Ducts shall be impervious to water, capable of being laid in temperature down to -10 degrees C and be sufficiently flexible to follow undulation in a trench bottom.”</p> <p>1.11 Insert the following additional Sub-Clause 27:<br/>           “At least 75mm clearance shall be given between the cable duct and the sides of the trench and between ducts sharing the same trench.”</p> <p>1.12 Insert the following additional Sub-Clause 28:<br/>           “At least 150mm clearance shall be given between cable ducts and services pipes belonging to other Statutory Undertaker.”</p> <p>1.13 Insert the following additional Sub-Clause 29:<br/>           “At least 500 mm shall be provided between lighting electrical cable ducts and communications cable ducts.</p> |
| <b>1422TS</b> | <p><b>1 Cable Joints</b></p> <p>1.1 Sub-Clause 1<br/>           Delete whole Sub-Clause text and replace with:<br/>           “<br/>           “Cable joints, other than for short term remedial work, shall not be permitted for underground cables supplying road lighting. Lighting installations shall be designed to employ a loop in - out arrangement without joints. When joints are installed these shall be made using jointing kits complying with BS 6910-1 which shall be installed in compliance with BS 6910-2. The Company shall repair damaged cables by replacing the full length of the damaged cable.”</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|               | <p>1.2 Sub-Clause 2<br/>Delete whole Sub-Clause text and replace with:<br/>“Approval is required from the Overseeing Organisation for any remedial jointing during new works. A record shall be kept to enable cable joints to be identified with the jointer responsible for the work.”</p> <p>1.3 Sub-Clause 3<br/>Delete whole Sub-Clause text and replace with:</p> <p>1.4 “Cable joints shall be made where described. Additional joints shall not be provided on cables in duct or trough. Approval is required from the Overseeing Organisation for additional joints using other fixing methods.”</p>                                                                                                                                                                                                                                                              |
| <b>1423TS</b> | <p><b>1 Armoured Cable Terminations</b></p> <p>1.1 Sub-Clause 1<br/>Delete whole Sub-Clause text and replace with:<br/>“Cables shall be individually terminated and existing cables re-terminated, and secured at switches, cut-outs and other electrical apparatus by means of a compression type gland and, where not provided as part of the apparatus, a gland plate compatible with the equipment material and complying with ‘BS 6121-1, BS EN 50262’.<br/><br/>Cable glands shall be manufactured in brass to BS2874.”</p> <p>1.2 Sub-Clause 2<br/>Delete whole Sub-Clause text and replace with:<br/><br/>“Earth connection to the cable armouring shall be made to the gland plate. At least one non ferrous earthing terminal compatible with the equipment shall be provided on the gland plate.”</p> <p>1.3 Sub-Clause 3<br/>Delete existing Sub-Clause 3.</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| 1424TS        | <p><b>1 Inspection and Testing to be Carried Out by the Company</b></p> <p>1.1 Sub-Clause 2</p> <p>Delete whole Sub-Clause text and replace with:</p> <p>“Not less than 3 months prior to commencing testing the Company shall submit an Inspection and Testing Method Statement, Risk assessments, and the Extent and Limitations statement, forming part of the BS7671 Electrical Installation Certificate, initial verification, The Extent and Limitations shall include:</p> <ul style="list-style-type: none"> <li>(i) a description of the electrical aspects of the lighting units including the Class of the luminaires to be used i.e. Class I or Class II together a statement of the testing regime to be adopted for these items.</li> <li>(ii) the extent of the network fixed wiring covered by BS7671 including the point of termination within the lighting units and the point of supply (origin) for the installation.</li> <li>(iii) any specific issues relating to the inspection and testing of the particular electrical installation.</li> </ul> <p>The Method Statement shall detail all tests and items of inspection to be undertaken, the sequence of tests, how each test will be undertaken and what Records will be recorded and what values for each test will prove compliance with BS7671. The Method Statement shall include the Lighting Installation design drawings and schematics. The schematic shall be suitable for inclusion within the pillars and cabinets forming part of the circuit described. Such included schematics shall be laminated or otherwise protected against damage by moisture or handling during use.</p> <p>The Company shall ensure that all required aspects of the electrical installation are sufficiently and correctly inspected and tested as required by BS7671 Part 6 and as further described in IEE Guidance Note 3 titled ‘Inspection and Testing’. Without reduction to the importance of any other aspect of BS7671 Inspection and Testing the attention of persons undertaking this work is particularly drawn to the following:</p> <ul style="list-style-type: none"> <li>(i) A cable over-sheath insulation test shall be carried out prior to any other testing of the Network cables.</li> <li>(ii) Continuity testing of protective conductors within The Network circuits, including main and supplementary equipotential bonding conductors, shall be carried out and the values of R1+R2 with respect to the circuit origin recorded. These measurements shall be carried out in a way that excludes any ‘parallel paths’.</li> <li>(iii) The resistance of all earth electrodes shall be measured</li> </ul> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|               | <p>and recorded.</p> <p>(iv) For Periodic Testing Class I luminaires a 500V insulation test shall be carried out between the phase and neutral cores connected together relative to the earth core and metalwork of the lighting unit. The initial commissioning testing being carried out on each individual core. Insulation resistance shall not be less than 1 Mohm in either case.</p> <p>(v) For Periodic Testing Class II luminaires a 500V insulation test shall be carried out between the phase and neutral cores connected together relative to the metalwork of the lighting unit. The initial commissioning testing being carried out on each individual core. Insulation resistance shall not be less than 2 Mohm in either case.</p> <p>(vi) For the Periodic Testing of Network cables a 500V insulation test shall be carried out, with the phase and neutral cores connected together, relative to the earth core and the metalwork of the lighting column. The initial commissioning and testing being carried out on each individual core. Insulation shall not be less than 6 Mohm regardless of cable length. This test shall be carried out with cables in place and connected to the supply side of the lighting units cut-outs. During the testing all luminaires shall be isolated on the consumer side of the cut-out.</p> <p>(vii) The Company shall ensure that a voltage reading is taken at each feeder pillar and at the terminals of the last current-using apparatus on each circuit, with all apparatus energised. Where a spur is created from the main circuit to energise a bollard, sign or similar the voltage at all such spurs shall also be recorded. The voltage measured at the last current consuming piece of apparatus on a given circuit shall be below 223.1V (3% of 230V; BS7671:2008) at full load.</p> <p>(viii) The Company shall record the earth fault loop impedance at the suppliers cut-out at every lighting unit with all earth conductors and earth electrodes in place in accordance with Guidance Note 3 para. 2.7.14. Values of Zs measured for any circuit shall not exceed those given in BS7671 Tables 41.2 and 41.3 for 0.4 second disconnection.</p> <p>(ix) The Company shall ensure that inspection and testing undertaken shall be sufficient to fulfil the requirements of the Electricity at Work Regulations 1989; Regulation 4(1) and other relevant legislation.</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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|               | <p>On conclusion of the Inspection and Testing, submission of the results to the Overseeing Organisation shall take place within 7 days of the completion of each circuit inspection and testing. If, in the opinion of the Overseeing Organisation, the Inspection and Testing is not considered adequate or the installation is not considered correct then all such necessary remedial work and repeated inspection and testing shall be undertaken by the Company and all corrected results submitted to the Overseeing Organisation.</p>                                                                                                                     |
| 1.2           | <p>Sub-Clause 4</p> <p>Delete existing Sub-Clause text and replace with:</p> <p>“The Company shall ensure that a voltage reading is taken at each feeder pillar and at the terminals of the last current-using equipment on each circuit, with all equipment energised. Where a spur is created from the main circuit to energise a bollard, sign or similar the voltage at all such spurs shall also be recorded. The voltage measured at the last current consuming piece of equipment on a given circuit shall not be below 223.1V (3% of 230V, BS 7671:2008) at full load.”</p>                                                                               |
| 1.3           | <p>Sub-Clause 5</p> <p>Delete existing Sub-Clause text and replace with:</p> <p>“The Company shall provide and maintain an installation, inspection and testing programme. The programme shall be provided to the Overseeing Organisation at least 14 days prior to any installation work being undertaken and shall be updated and provided to the Overseeing Organisation when the programme changes from that previously provided to the Overseeing Organisation. The programme shall detail duct laying, cable pulling, column erection, inspection and testing. The programme will include dates when records will be provided.”</p>                         |
| 1.4           | <p>Sub-Clause 6</p> <p>Delete existing Sub-Clause text and replace with:</p> <p>“The Company shall furnish the Overseeing Organisation with two copies of a certificate verifying compliance with BS 7671 upon satisfactory completion of the inspection and tests. The layout of the BS7671 Certificate shall conform to the sample Certificates as provided in the LDS8005 A.2 InspTest - ‘Electrical Inspection and Testing of Lighting and associated Electrical Apparatus and Installations with Model Forms’. The separate certificate covering the testing of the luminaires and similar items considered outside of the scope of BS7671 shall also be</p> |

**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|               | <p>submitted.</p> <p>Insert the following additional Sub-Clause:</p> <p>“The value of Ze provided by the electricity supplier at the electrical origin shall be no greater than 0.35 ohm for TN-C-S supplies and 0.8 ohm for TN-S supplies. The Overseeing Organisation shall not accept values that exceed these Ze maximum values. The Company shall ensure the Ze values are achieved by the DNO prior to acceptance of the supply on behalf of the Overseeing Organisation.”</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 1501A         | <p><b>1 Introduction</b></p> <p>1.1 Motorway and Trunk Road Communications for the Scottish Trunk Road Network shall be referred to as Traffic Scotland Equipment. The Traffic Scotland Equipment is provided to support the provision of Traffic Scotland Service and forms part of the Scottish Minister’s Intelligent Transport System. All work relating to the design provision, uplifting, diversion, relocation, construction, installation, connection, testing, commissioning, integration, documentation and handover of Traffic Scotland Equipment shall comply with this Series. This Series supersedes all previously published versions of this Specification Series. For the purposes of this Series unless otherwise described in the New Works Requirements the word “provide” or “provision” means design, uplift, divert, relocate, construct, install, connect,, test, commission, integrate, document and handover to maintenance and operations.</p> <p>1.2 This document serves as the outline specification for the provision of Traffic Scotland Equipment which shall typically consist inter alia of the following elements :</p> <ul style="list-style-type: none"> <li>(a) ducting and chambers and cable management systems;</li> <li>(b) cables and all cable fittings;</li> <li>(c) cabinets and all ancillary items;</li> <li>(d) Emergency Roadside Telephones (“<b>ERT</b>”);</li> <li>(e) Closed Circuit Television (“<b>CCTV</b>”) cameras;</li> <li>(f) National Traffic Data Service (NDS) detection equipment;</li> <li>(g) (NDS) vehicle detection – EuroVI classification levels;</li> <li>(h) Variable Message Signs (“<b>VMS</b>”);</li> <li>(i) Lane and Speed Control Signalling;</li> <li>(j) Motorway Access Control (“<b>MAC</b>”);</li> <li>(k) Journey Time (“<b>JT</b>”) equipment;</li> </ul> |



**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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|               | <ul style="list-style-type: none"> <li>(l) Ramp Metering (“<b>RM</b>”);</li> <li>(m) not used;</li> <li>(n) not used;</li> <li>(o) enforcement systems;</li> <li>(p) Weigh-in-Motion (“<b>WIM</b>”) systems;</li> <li>(q) communications infrastructure;</li> <li>(r) mains power supply and distribution infrastructure;</li> <li>(s) Instation equipment;</li> <li>(t) hard landscaping;</li> <li>(u) transmission stations;</li> <li>(v) structural infrastructure on which Traffic Scotland equipment is mounted on.</li> </ul> |
| 1.3           | <p>The Overseeing Organisation is Transport Scotland, an agency of the Scottish Government. The representative of the Overseeing Organisation is the Traffic Scotland Manager who is responsible for all aspects of the Traffic Scotland Equipment. Contact details for the Traffic Scotland Manager are provided in the New Works Requirements Part 3 The Contracting Authority is acting on the behalf of the Overseeing Organisation in respect to all New Works Requirements detailed in Schedule 2 Part 3.</p>                 |
| 1.4           | <p>The Traffic Scotland Equipment and system are unique and differ in many respects from other driver information and control systems operating within the UK such as those operated by the Highways Agency. The Company shall ensure that all parties working on any Traffic Scotland element of the Agreement take cognisance of the differences as expressed in this Series 1500 and other relevant documents.</p>                                                                                                               |
| 1.5           | <p>This Series 1500 is applicable to all work undertaken under any Agreement that includes Traffic Scotland Equipment and structural infrastructure on which Traffic Scotland Equipment is mounted.</p>                                                                                                                                                                                                                                                                                                                             |
| 1.6           | <p>Roadside verges on or into which Traffic Scotland infrastructure or equipment is to be provided shall be of an adequate width and topology acceptable to Traffic Scotland. The Traffic Scotland roadside sites shall be of suitable for future maintenance activities and if required access by ERT user and shall either be finished horizontal or be of an appropriate minor single gradient.</p>                                                                                                                              |
| 1.7           | <p>The design and construction of any works adjacent to a Traffic Scotland Equipment location shall be such as to adequately route surface water away from the Traffic Scotland Equipment.</p>                                                                                                                                                                                                                                                                                                                                      |
| 1.8           | <p>The design of safety fences, barriers and works directly adjacent to</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|               | <p>Traffic Scotland Equipment shall ensure that such works are achievable and are undertaken without the adjacent Traffic Scotland Equipment being damaged or the service provided by that Traffic Scotland Equipment being adversely affected.</p> <p>1.9 There are requirements for all Traffic Scotland Equipment to be located and suitably protected from collision and either vehicle restraint systems or passively safe infrastructure shall be provided in accordance with all relevant requirements and specifications relating to vehicle restraint systems or passively safe equipment</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>1502A</b>  | <p><b>1 General Requirements.</b></p> <p>1.1 The Company shall carry out all such work as required by the Agreement in such a way as to comply with this 1500 Series and the New Works Requirements.</p> <p>1.2 The NDX drawings are typical/none site specific representing the Overseeing Organisation's preferred arrangements. The Company is required to develop a design based on the principles laid down in these drawings.</p> <p>1.3 Traffic Scotland Equipment that is issued by the Overseeing Organisation is referred to as Transport Scotland Issued Equipment in this Series 1500. Transport Scotland Issued Equipment is listed in the New Works Requirements. The Company, unless otherwise described in the New Works Requirements, shall be responsible for the collection and loading of Transport Scotland Issued Equipment from the Overseeing Organisation's stores. The general location of the Overseeing Organisation's stores is given in the New Works Requirements. The Company shall be responsible for all effort associated with the uplifting of Transport Scotland Issued Equipment.</p> <p>1.4 The Company shall be responsible for the management, maintenance, safe handling and safe keeping of all Traffic Scotland Equipment whether supplied by the Company or supplied as Transport Scotland Issued Equipment from the point in time that the equipment is uplifted by the Company from the Traffic Scotland Service Nominated TSIE Store or delivered by the Contracting Authority to the Company's TSE Assembly Point, until the Taking Over Certificate is issued. Where Traffic Scotland Equipment is not being directly installed following it coming into the Company's possession, the Company shall store all equipment within a secure, safe, pest proof, dry ambient temperature warehouse environment. At the time of Transport Scotland Issued Equipment uplift the Overseeing Organisation shall provide a record stating that the Transport Scotland Issued Equipment is operationally compatible with the 'New Works Requirements Traffic Scotland Equipment. The Company shall prepare and issue a report and method statements detailing proposals associated with the management, maintenance and safe keeping of all Traffic Scotland Equipment.</p> <p>1.5 The Company shall provide a written request detailing what Transport</p> |

**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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|               | <p>Scotland Issued Equipment is required, its type, and configuration, required date for delivery to or uplift by the Company. All Transport Scotland Issued Equipment shall be uplifted in accordance with the arrangements agreed with the Traffic Scotland Manager and the organisation responsible for the Overseeing Organisation's stores at the times and in the manner described in the New Works Requirements. The Company shall adjust the requested uplift time as reasonably requested by the organisation responsible for the Overseeing Organisation's stores. The Company shall retain a record of all documentation associated with requesting and uplifting Transport Scotland Issued Equipment as described in the New Works Requirements and such records shall form part of the records and documentation in compliance with Clauses 1504SR and 1540SR.</p> |
| 1.6           | <p>Unless otherwise stated in the New Works Information, the Company shall be responsible for providing written notice within 24 hours and documented evidence within three days, of any defects or damage to equipment received or uplifted from the Overseeing Organisation's store.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1.7           | <p>The Company shall be responsible for undertaking all works associated with repairing and replacing any Traffic Scotland Equipment damaged or missing after purchase by the Company or uplifted from the Overseeing Organisation's stores. In compliance with the Agreement the Company shall be responsible for the Company's and Overseeing Organisation's costs associated with repairing and replacing any Traffic Scotland Equipment damaged or missing after purchase by the Company or uplifted from the Overseeing Organisation's stores. The period for which the Company shall be responsible and all associated costs for replacement and repairing of Traffic Scotland Equipment shall be in compliance with the Agreement.</p>                                                                                                                                   |
| 1.8           | <p>Prior to commencing any site work the Company shall supply to the Overseeing Organisation written information and confirmation of compliance with the Agreement for all Company supplied Traffic Scotland Equipment and Traffic Scotland related materials that will be incorporated in the New Works. This information shall include the following details:</p> <ul style="list-style-type: none"> <li>(i) Detail of the manufacturer</li> <li>(ii) The specification, safety regulations and statutory requirements the equipment is compliant with</li> <li>(iii) The manufacturers' product number</li> <li>(iv) A specification sheet</li> <li>(v) Transportation, handling and storage requirements</li> <li>(vi) Installation instructions,</li> <li>(vii) Safety information for installation and operation</li> </ul>                                               |

**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|               | <p>(viii) Maintenance requirements.</p> <p>(ix) Operational Instructions</p> <p>(x) De-commissioning information</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 1.9           | <p>The Company shall provide all self certification, production acceptance testing and factory testing documentation and test results for each item of active/operational Traffic Scotland Equipment that the Company has to provide in accordance with the New Works Requirements. The testing undertaken shall be no less than that detailed in the New Works Requirements.</p>                                                                                                                                                                                                                                                                                  |
| 1.10          | <p>In order to allow time for the integration, testing and commissioning of the Traffic Scotland Equipment, the Company shall programme the New Works or sections thereof so that the Traffic Scotland Equipment is available for integration, testing and commissioning for a period of time before the New Works or sections thereof is open to the road user and such period of time shall be in compliance with the testing requirements highlighted within the New Works Requirements.</p>                                                                                                                                                                    |
| 1.11          | <p>The Company shall provide information, access and appropriate facilities for and to the Electricity Supply Company and communication suppliers as required by them to fulfil their obligations to undertake service connections, disconnections, repairs and reconnections, in compliance with the Agreement. The Company shall provide information, access and facilities for and to the Contracting Authority and other Traffic Scotland Service providers as required by them to fulfil their appropriate obligations associated with the New Works in compliance with the Agreement. The Company shall provide site supervision resources at all times.</p> |
| 1.12          | <p>The Company shall provide all drawings, documentation and certification in compliance with the Agreement</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1.13          | <p>The Company shall only employ personnel, sub-contractors and consultants qualified and experienced in the provision of Intelligent Transport Systems and associated Internet Protocol (IP) communications systems. The Company shall provide the Overseeing Organisation with full details of the qualifications and experience of all personnel, sub-Contractors and consultants whom he proposes to employ. Such details shall be provided in writing, 56 days prior to the commencement of any Traffic Scotland Equipment work or at any earlier date as required to comply with the New Works Requirements.</p>                                             |
| 1.14          | <p>The Company shall be responsible for the appropriate disposal of all waste, existing equipment and materials, in compliance with TR1100, the WEEE Regulations and any additional obligations required for compliance with the New Works Requirements. The Company shall maximise recycling of all forms of waste arising from existing equipment materials and shall detail such recycling measures in the Project Environmental Plan.</p>                                                                                                                                                                                                                      |

**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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|               | <p>1.15 The Company shall comply with all energy generation requirements as detailed in the New Works Requirements.</p> <p>1.16 Unless stated otherwise in the Agreement, the Company shall prepare specific method statements for all work to be undertaken under the Agreement and provide such method statements to the Overseeing Organisation for comment at least 28 days prior to the specific type of work commencing that the method statement refers to.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>1503A</b>  | <p><b>1 Materials, Equipment and Workmanship</b></p> <p>1.1 The Company's Electrical workmanship, materials and equipment supplied shall comply with current BS 7671 Requirements for Electrical Installations (IEE Wiring Regulations), the Electricity at Work Regulations and the Electricity Safety, Quality and Continuity Regulations (ESQCR).</p> <p>1.2 Unless otherwise described in the New Works Requirements, Traffic Scotland Equipment shall not share any electricity supply with any other equipment.</p> <p>1.3 All Traffic Scotland Equipment provided by the Company shall comply with TR1100, and subsequent Scottish amendments to TR1100 and shall be fitted with such mounting, support and access arrangements to allow for compliant installation, maintenance and operation within the Traffic Scotland Equipment cabinet space or on post, mast, bracket or gantry as made available by the Overseeing Organisation or Company.</p> <p>1.4 The Company shall take full account of future maintenance requirements of all Traffic Scotland Equipment to be undertaken by the Contracting Authority. When taking account of future maintenance the Company shall comply with the requirements of Construction (Design and Management) Regulations 2007, or subsequent revisions, and the need for the Overseeing Organisation to maintain journey time reliability through minimising traffic management and meet all specific objectives of the Traffic Scotland Service as described in the New Works Requirements.</p> <p>1.5 The minimum general technical and Quality Control requirements for work carried out on the Traffic Scotland Equipment shall be as those set out in the document TR1100 and subsequent Scottish amendments to TR1100 and within the Company's Quality Plan and method statements. The method statements shall ensure outputs are delivered that are in compliance with this Series 1500 and the New Works Requirements. The Company's Quality Plan shall include reference to a recognised and current workmanship standards document and the Company shall comply with such workmanship standards and the Company's method statements.</p> <p>1.6 A listing of Standard Drawings and other Specifications to be supplied to the Company and used for this Agreement is given in Appendix 0/4 of</p> |

**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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|               | the Specification.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>1504A</b>  | <p><b>1</b></p> <p><b>Site Records</b></p> <p>1.1</p> <p>The Company shall keep a daily record in duplicate in a clear and legible form of all work carried out for Traffic Scotland Equipment as it proceeds. One copy of the daily records shall be kept available on site for inspection by the Overseeing Organisation during the Agreement and shall form part of the overall documentation package as detailed in the New Works Requirements to be handed to the Overseeing Organisation for record purposes. All design phase records and design information shall be kept available on site for inspection by the Overseeing Organisation during the Agreement and shall form part of the documentation as detailed in the New Works Requirements to be handed to the Contracting Authority for record purposes. As a minimum the following information shall be recorded by the Company:</p> <ul style="list-style-type: none"> <li>(i) Duct locations including depth, offset from carriageway edge, number and size of ducts and duct material, duct joints/seals used, ducted network layout, infill material used, record sheets showing dates and results of mandrelling and pressure testing</li> <li>(ii) Chamber locations including type, depth, incoming and outgoing ducts, type of chamber cover, and duct plugs or duct sealing method used</li> <li>(iii) Cabinet locations, configuration and type</li> <li>(iv) Cabinet and cable identifiers</li> <li>(v) Route, length and type and cable drum number of each individual length of installed cable</li> <li>(vi) Position of Electricity Supplier supply points together with Electricity Supplier name and Electricity Supplier provided information as detailed in NDS9551 "Requirements for Electricity Supply to Traffic Scotland and Associated Equipment Sites"</li> <li>(vii) Position of any private communications interfaces together with private wire supplier name, type identifying no, circuits records, capacity and capability.</li> <li>(viii) Within an electronic spreadsheet all Traffic Scotland Equipment within the Site shall be logged and contain the Traffic Scotland Operational ID, the Ordinance Survey grid reference of all Traffic Scotland Equipment, configuration, addressing and serial numbers, site reference/Operational ID and Traffic Scotland marker post reference and cross sectional position with kerblines offsets of all installed Traffic Scotland equipment including all equipment within cabinets, racks and buildings. This will form part of an overall Traffic Scotland Equipment Inventory. The means of</li> </ul> |

**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

| <b>Clause Number</b> | <b>Title</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|                      | <p>establishing the identifier for Traffic Scotland Equipment is described in the New Works Requirements. Both the Company's identification method and final chainage/Traffic Scotland Operational ID shall be provided within the same document.</p> <ul style="list-style-type: none"> <li>(ix) Details regarding the removal only and removal and re-siting of existing Traffic Scotland Equipment. These records shall detail the original location, the date it was made disused and the method of disposal of any Traffic Scotland Equipment.</li> <li>(x) Details of all works undertaken in the Traffic Scotland Control Centre (TSCC), transmission stations and any other location where Traffic Scotland Equipment is provided so that the necessary as built records can be prepared and in compliance with the New Works Requirements.</li> <li>(xi) Any additional requirements detailed in the New Works Requirements.</li> <li>(xii) The Company shall maintain an up to date record of all equipment and cable provided by the Overseeing Organisation as detailed in the New Works Requirements.</li> <li>(xiii) At a minimum, in an electronic spreadsheet, a record of requests for, uplift, storage and installation, integration, commissioning, testing and handover of Transport Scotland Issued Equipment and Company supplied Traffic Scotland Equipment so that there is an up to date understanding of the current status of all Traffic Scotland Equipment</li> <li>(xiv) Current and historic equipment calibration records.</li> </ul> |
| <b>1505A</b>         | <p><b>1 Provision of Cabinets and Ancillary Items</b></p> <ul style="list-style-type: none"> <li>1.1 All cabinets shall be manufactured using aluminium or stainless steel unless described otherwise in the New Works Requirements and shall be painted using a paint system suitable for the cabinet material and complying with the 1900 Series. The top coat exterior colour shall be Slate Grey RAL 7015. Ancillary Items shall be provided as detailed in the New Works Requirements.</li> <li>1.2 All locking mechanisms shall be stainless steel and shall use a form of lock and key that is compatible with existing Traffic Scotland Equipment cabinets. Where dissimilar materials will be encountered, suitable barriers or gaskets shall be supplied to prevent corrosion or galvanic action resulting from the direct contact of dissimilar metallic materials.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>1506A</b>         | <p><b>1 Cables</b></p> <ul style="list-style-type: none"> <li>1.1 Traffic Scotland cable types shall be in compliance with the New Works</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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|               | <p>Requirements.</p> <p>1.2 Other than cables used for internal wiring of cabinets and equipment, non-armoured communications cables and mains power cable shall not be used. Cables that are only located within cabinets and racks shall be referred to as wiring.</p> <p>1.3 Unless otherwise described in the New Works Requirements, the Company shall be required to submit reasons to the Overseeing Organisation for any installations requiring the use of mains power cable with conductors larger than 25mm<sup>2</sup>. If such reasons are justifiable the Overseeing Organisation shall approve the use of conductors larger than 25mm<sup>2</sup> otherwise the request shall be rejected and a compliant design shall be made by the Company.</p> <p>1.4 Each drum of cable delivered to the Site shall have quality inspection certificates attached to each flange in accordance with the relevant cable specification. The Company shall ensure that the certificate relates to the cable to which it is attached. The certificate shall form part of the Site Records and a copy shall be given to the Overseeing Organisation prior to the installation of the cable. Before installing armoured communication cables, the Company shall test and accept the integrity of the sheath in accordance with cable test specification MCG1022 (for copper cables) or MCG1055 (for fibre cables). All cable test results shall form part of the Site Records (Clause 1504) and a copy of all cable test result shall immediately, on completion of each cable test, shall be stored with the Site Records and be provided to the Overseeing Organisation. The Company shall include the necessary hold points within the Quality Plan for the immediate provision of cable test results. The location in the ground of cable lengths by reference to their drum numbers shall be kept with the daily records in compliance with Clause 1504.</p> <p>1.5 All underground Traffic Scotland Equipment cables shall be installed in ducts.</p> <p>1.6 The outer sheath of all Traffic Scotland Equipment cables shall be coloured black.</p> <p>1.7 The Company shall return part used drums of cable to the Company's site compound area for subsequent use. Part used drums shall be clearly marked and kept separate from unused drums. The Company shall keep and maintain a register of all cable drums; the register shall for each cable drum include the cable drum number, cable size and the length(s) of cable removed. Surplus cable lengths shall be neatly coiled or drummed as appropriate and the Company shall record the length and other details as for drummed cable specified above. Cable ends will be sealed in accordance with NDX Drawing NDX1061-00.</p> <p>1.8 The Company shall be responsible for arranging with the cable supplier for the collection of empty cable drums where the cable supplier offers such a service. The Company shall provide a record of all drums</p> |



**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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|               | collected. Where no collection of empty cable drums is offered by the supplier the Company shall then offer the empty cable drums to the cable supply industry otherwise the Company shall dispose of the empty cable drums in an environmentally friendly manner and shall confirm the method of disposal to the Overseeing Organisation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>1507A</b>  | <p><b>1 Cable Installation</b></p> <p>1.1 All cables shall be laid in accordance with this Clause.</p> <p>1.2 Cables shall only be laid when the ambient temperature is above 0° C on a rising thermometer, and the cable has been stored for at least the previous 24 hours at a temperature greater than 0° C.</p> <p>1.3 Sufficient length of cable shall always be installed to allow for correct cable termination and provision of service loops all in accordance with Clause 1507.18SR. When termination does not proceed immediately following the installation of the cable, the cable ends shall be protected from damage and sealed against the ingress of moisture in accordance with drawing NDX1061-00.</p> <p>1.4 The Company shall not install cables into ducts until the duct mandrel testing and pressure tests have been completed and stored with the daily records as described in Clause 1504SR. The Company shall make the completion of the mandrel and pressure test a hold point in the Company's quality plan. Furthermore the Company shall satisfy himself that ducts are, in all respects, suitable for cable installation prior to the installation of cables.</p> <p>1.5 No cable shall be left exposed at the end of any work period.</p> <p>1.6 In the event of any damage whilst cables are being installed, the whole of the length of cable shall be removed, replaced or repaired, reconnected and re-tested at the Company's expense prior at the earliest possible date. All cable repairs shall be at the discretion and to the satisfaction of the Overseeing Organisation.</p> <p>1.7 Every cable shall be permanently labelled using plastic cable markers (Critchley type or equivalent) to identify the destination of the cable in accordance with the drawing NDX1061-00 to ensure its unambiguous identification immediately following its installation. The cable markers shall be near to the cable terminations and visible within the cabinet.</p> <p>1.8 The Overseeing Organisation shall be provided with the opportunity to witness the installation of all cables and the Company shall provide an indication to the Overseeing Organisation of where cable installation will take place at least 14 days prior to the cable installation unless otherwise detailed in the New Works Requirements.</p> <p>1.9 For duct installations cables shall be drawn into cable ducts and chambers that have been installed in compliance with Clauses 1530SR, 1531SR and 1532SR. For cable tray or similar cable management installations the cable installation shall be in accordance with this</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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|               | <p>Clause 1507SR.</p> <p>1.10 Unless otherwise described in the New Works Requirements, power supply cables shall not share the ducts with longitudinal communications cables. For power supply cable runs less than 50 metres, a relaxation has been permitted to allow shared ducts for power and communications cables. For power cable runs greater than 50 metres a separate duct shall be installed for the power cable which at no point is less than 0.5 metres from the ducts containing communications cabling.</p> <p>1.11 Cables shall be installed from a central chamber point outwards using a static mechanical winch fitted with an adjustable clutch, the setting of which shall ensure that at no time during the drawing of cables will the maximum longitudinal mechanical cable loading be exceeded. A copy of the current calibration certificate relating to the winch shall be provided to the Overseeing Organisation prior to use and shall also be held with the daily records in compliance with Clause 1504SR.</p> <p>1.12 The ducts shall be lubricated during installation using a suitable water based, biodegradable lubricant. Such lubricant shall be compatible with all elements of the installed cable and duct infrastructure. The draw cord shall not be used for cable installation. The Company shall use the draw cord to pull through a purpose made cable pulling rope which shall then be used for cable installation. The cable pulling rope shall be attached to the cable by means of a pulling eye fitted to a stocking (copper and power cable) or a pulling eye attached directly to the central strength member (fibre cable). In all cases the Company shall attach a swivel between the cable pulling rope and the pulling eye.</p> <p>1.13 Purpose made bell-mouths shall be fitted to the exit and entry of every duct, including all intermediate points, prior to the commencement of cable installation. A purpose made cable chute shall be used at the cable entry point to the network. Also, during cable laying purpose made rollers shall be temporarily secured to the chamber cover frame to ensure the cable sheath is protected from contact with the frame metal. Cable guides shall be used to support the cable at all intermediate chambers through which the cable is being installed.</p> <p>1.14 Where intermediate chambers exist on a cable route, the cables shall where practical, be installed through these chambers in one operation; the Company shall ensure that an operative is present at every such chamber to ensure the safe installation without damage to the cable. Where cables pass through intermediate chambers, the Company shall, immediately after installation, label each cable with the destination of the cable and chamber or equipment reference as appropriate approximately 150 mm from the entry and exit points of the chamber. The type of labelling to be used shall comply with drawing NDX1061-00.</p> <p>1.15 Where more than one cable is to be installed in a duct, before the second cable is pulled the Company shall ensure that the duct is unobstructed and the cable pulling rope to be used does not pass</p> |

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|               | <p>around the existing cable. If the Company cannot ensure the cable pulling rope is not around the existing cable the Company shall introduce a new pulling rope by using rods or other means independent of the existing draw rope. Where multi-pair copper and optical fibre cables are to be installed into the same duct, the multi-pair copper cable(s) shall be installed first.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 1.16          | Optical fibre cables shall additionally be marked at intervals of 500 mm along their length, inside chambers. If the cable sheath is not indelibly marked during manufacture the marking shall be added using 25 mm wide, yellow PVC adhesive tape or alternative fit for the purpose.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 1.17          | Cables shall not be bent to an internal radius of less than 12 times the external diameter of the cable or the radius recommended by the manufacturer, whichever is greater.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 1.18          | Unless otherwise described in the New Works Requirements, all fibre optic and copper communications cables shall be provided with service loops. These service loops shall be installed in a Type 'C' chamber located at each copper or fibre termination pillar of sufficient dimensions to ensure the cable is not exposed to bends below the minimum bending radius. Each loop shall be made of a minimum of 3 metres of each cable and comply with drawing NDX1063-03.                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 1.19          | Unless otherwise described in the New Works Requirements or required by the Overseeing Organisation, no uncoated metal cable supports shall be fitted within the chambers. All metal supports shall be plastic coated or similar.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1.20          | The Company shall ensure that on completion of the cable installation works a draw cord is installed in each duct and both ends secured within the terminating chambers or enclosure.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 1.21          | The use of verge located cable troughs shall not be permitted without the specific written authority of the Overseeing Organisation unless used in temporary situations to provide continuity of service. Such written authority shall only be provided where the Company can provide evidence of constraints that would prevent the installation of ducts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 1.22          | In above ground situations cables shall be installed on cable management systems such as ladder type cable trays or trunking or troughs. The cable management systems shall prevent the cables being bent to a diameter less than that specified in Clause 1507.17SR. No cables in an external environment shall be left exposed and cable tray lids and trunking covers shall be provided to protect the cables from physical and environmental damage. All cable tray lids and trunking covers shall be positively retained using suitable fixings. In situation where the cable management system covers and lids could fall and cause injury or damage the covers and lids shall be provided with stay chains or wires to prevent the covers and lids falling. On horizontal cable management systems the cables shall be tied to the cable management system at intervals not exceeding 5 metres and at points |

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|               | <p>where the cables change direction. On vertical cable management systems the cables shall be tied to the cable management system at intervals not exceeding 500mm and shall be tight enough to provide cable strain relief. The support and attachment mechanisms for the cable managements systems shall be of sufficient strength to support the calculated cable mass and the spacing of the support and attachment mechanisms shall be at intervals that will only allow a maximum deflection of 10mm in the cable tray or trunking. All cable management system parts, fittings supports and attachment mechanisms shall be protected from corrosion and shall be fit for purpose for at least 30 years within the environment they are installed.</p> <p>1.23 Cables shall be routed within masts and posts.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>1508A</b>  | <p><b>1 Installation of Cabinets – General items</b></p> <p>1.1 Cabinet types shall be those as described in the New Works Requirements.</p> <p>1.2 The Company shall provide and install paved areas around cabinets together with access paths, steps and hard standings in accordance with Clause 1539. With the cabinet door fully open a minimum 700mm clearance shall be provided between the edge of the cabinet door and any retaining wall, fence, embankment or cutting. The 700mm clearance does not take into account the required working width and access requirements and such requirements shall be included in the overall clearance between cabinets and adjacent features.</p> <p>1.3 The Company shall install foundations and erect cabinets in accordance with the appropriate NDX or Agreement Specific Drawing.</p> <p>1.4 Unless otherwise described in the New Works Requirements or where Combined Equipment Cabinets (CECs) are utilised, cabinets shall be situated in groups located in a consistent sequence as shown typically in NDX1063-00.</p> <p>1.5 Cabinet doors shall be orientated to provide the safest possible environment for roadside maintenance staff and wherever possible cabinets shall be orientated so when the doors are open they provide protection from spray from vehicles. Cabinet doors shall be capable of opening and closing without being fouled by paved area or access paths or steps.</p> <p>1.6 Where cabinets are to include a resin seal then after completion of the terminations and testing, but before the addition of gravel, the entry and exit ducts into the base of the cabinets or below the cabinets shall be sealed with expanded foam to prevent the ingress of soil, pea gravel and water into the duct ends. The internal void within the plinth or base shall then be filled with 6mm-pea gravel to the level shown on the relevant cabinet drawing. Furthermore the base of each cabinet shall additionally be resin sealed typically in accordance with drawing NDX1002-01 or specific Agreement Drawing. To achieve the required</p> |

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|               | <p>resin seal the duct ends shall be above the finished level of the resin seal by a minimum of 10mm and a maximum of 30mm. The resin seal shall be poured to provide a waterproof seal to all cables and finished to provide a smooth and level surface.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1.7           | <p>For CEC cabinets and similar where cable entry takes place via penetrations through a suspended metal base plate then correct and compatible glands shall be used in accordance with the cabinet manufacturer's instructions.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 1.8           | <p>The Company shall keep the interior of cabinets free from moisture and dirt. The Company shall ensure that the doors of each cabinet are closed and properly secured after the installation of Traffic Scotland Equipment in the cabinet and after the completion of any other work.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 1.9           | <p>The Company shall ensure that all enclosures and cabinets, following the drilling, cutting or removal of cable entry knockouts, maintain the manufacturer's quoted IP Classification ratings and are cleaned of all waste, swarf and surplus material prior to any further work being undertaken. Where such drilling and modification of an enclosure and cabinet causes removal or damage to any protective coating, the coating shall be made good in accordance with the manufacturer's instructions and/or in accordance with Series 1900.</p>                                                                                                                                                                             |
| 1.10          | <p>The Company shall ensure that power is available and all cabinet environmental control equipment is tested, commissioned and operational before any Active Equipment is installed in the cabinet.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1.11          | <p>Power supply distribution and protection circuits shall be housed in cabinets. The power supply cabinets are as detailed in drawings NDX1011-06, NDX1011-07 and NDX1011-08. The layout of the supply distribution and protection circuits shall be as detailed in the drawings. The circuits detailed on the NDX Drawings are shown for example only and the Company shall provide power schematic layout drawings in a format as agreed with the Overseeing Organisation. The Company shall also ensure that this work conforms to the requirements of the BS7671.</p>                                                                                                                                                         |
| 1.12          | <p>Where cabinet type 600(S) is used, they shall be installed as shown on drawings in the NDX1002 series. The Company shall install such wiring and supports to accommodate equipment to be housed in accordance with the Agreement. Where a termination frame arrangement is required, the frame shall be wired using 0.5 mm single stranded copper twisted jumper wire for the links. Where appropriate the frame can be wired off-site. All wiring shall be mechanically supported and retained using suitable ties or cord and terminations shall conform to the relevant sub-clause of Clause 1513 and shall satisfy the requirements of the applicable Workmanship Standards Manual that forms part of the Quality Plan.</p> |
| 1.13          | <p>Where specialist cabinets or CECs are used, they shall be installed in accordance with the Agreement Drawings and/or manufacturer specific installation requirements.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

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| 1509A         | <p><b>1 Gantries for Overhead Equipment</b></p> <p>1.1 Where required to be installed, the Company shall provide Gantries in compliance with the New Works Requirements.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1511A         | <p><b>1 Marker Tape</b></p> <p>1.1 All ducts installed underground shall have their position indicated by the use of detectable marker tape. Unless otherwise described in the New Works Requirements such marker tape, as described below, shall be buried in the trench above the cable/duct as detailed in NDX1063-00.</p> <p>1.2 Marker tape shall be manufactured from self coloured thermoplastic material not less than 150 mm wide; it shall have a metallic insert or backing which will allow detection by electronic route tracing equipment. The detectable metallic component and the form of tape construction shall be either:</p> <p>(i) Stainless steel wire or wires with a minimum total cross sectional area of 0.30 mm sq. laid in a sinusoidal wave form or stainless steel strip with minimum dimensions of 10 mm wide and 100 micron thick. The stainless steel wire or strip shall be sandwiched in between two layers of thermoplastic tape with a combined minimum tape thickness of 150 micron or bonded to one layer of thermoplastic tape with a minimum thickness of 150 micron.</p> <p>(ii) Aluminium foil with minimum dimensions of 50 mm wide and 9 micron thick totally enclosed in between two layers of thermoplastic tape. The combined thickness of the two tape layers shall be a minimum of 400 micron.</p> <p>1.3 Joints between successive lengths of tape shall be made using crimps or clamps such that the electrical continuity and tensile strength of the tape is maintained. The joint shall be protected from corrosion and attack from ground chemicals.</p> <p>1.4 The wording on the marker tape shall read "CAUTION COMMUNICATIONS/ POWER CABLES BELOW". The wording shall occur at intervals up to a maximum of 1m apart. The letters of the wording shall be a minimum of 30 mm high with a minimum of 5 mm line thickness</p> <p>1.5 Marker tape shall be yellow in colour, with wording in black.</p> |
| 1512A         | <p><b>1 Provision of and Installation of Ancillary Items</b></p> <p>1.1 Unless otherwise described in the New Works Requirements, the Company shall provide all ancillary items forming part of the Traffic Scotland Equipment as required to complete the New Works.</p> <p>1.2 The Company shall be responsible for all provision associated with</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

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|               | ancillary items of Traffic Scotland Equipment at all locations where such ancillary items are required unless otherwise described in the New Works Requirements.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>1513A</b>  | <p><b>1</b>      <b>Jointing and Termination of multi-pair communications and feeder Cables</b></p> <p>1.1      No permanent multi-pair communications cable underground joints are permitted on Traffic Scotland installations. Temporary above and below ground joints in damaged operational cables shall be allowed until the full length of damaged cable is replaced. Repairs to operational cables shall be undertaken immediately after the damage has occurred. Cable replacement shall take place as soon as possible. Unless otherwise described in the New Works Requirements the Company shall be responsible for all cable repairs and replacement.</p> <p>1.2      All permanent multi-pair communication cables joints and terminations shall take place within a cabinet except in the loop tail to feeder cable joints as described in Clause 1513.3.</p> <p>1.3      The Company shall use the type of cable joints between detector loop tails and feeder cables as detailed in NDX1063-04 and shall comply with Clause 1523 of this 1500 Series. The loop tail and feeder cable joints shall be installed in loop roadside chambers in accordance with NDX1063-04. The conductors shall be secured by tightening the screws with a torque screwdriver to within the range 0.4 to 0.6 Nm. The conductors shall be of sufficient length to facilitate routine maintenance and allow for four subsequent re-terminations. Care shall be taken at all times to maintain correct pairing. The Company shall use proprietary cable markers to clearly identify all cables and cable cores by using correctly fitting labels at both ends. To terminate multi-pair cables in cabinets, the outer SWA shall be removed at the gland plate and the inner sheaths at the highest point within the frame. This shall be carefully removed from the cable ends to reveal the pairs of insulated conductors. All surplus jelly shall be removed by the use of a clean dry cloth taking care not to stretch the insulation, and any fluid substance to aid the cleaning process shall have had the prior approval of the cable manufacturer and be shown to have no detrimental effect on the cable or, if applicable, the jointing system.</p> <p>1.4      Cables shall be glanded and dressed neatly and routed within the cabinet with proprietary pair ties and pair identification markers in a neat and orderly manner and shall be terminated in compliance with the pair allocation tables as detailed in the New Works Requirements. The Company shall route the incoming and outgoing cables to vertically align the cables gland plate position with the point they enter/leave the cabinet</p> <p>1.5      The lay of the cable shall be maintained up to the termination position. All conductor pairs shall be identified by means of a numbered plastic</p> |

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|               | <p>sleeve or collar.</p> <p>1.6 Conductors shall be terminated in terminal blocks complying with Clause 1514. The conductors shall be secured by tightening the screws with a torque screwdriver to within the range 0.4 to 0.6 Nm. The conductors shall be of sufficient length to facilitate routine maintenance and allow for four subsequent re-terminations. Care shall be taken at all times to maintain correct pairing. The Company shall clearly identify all links by using correctly fitting labels at both ends.</p> <p>1.7 Where the Company is required to joint or terminate cables onto existing operational cables, the Company shall comply with clause 1522.</p> <p>1.8 Links shall be installed and connected using, as appropriate, the insulated conductors of multi-pair/0.9 mm cable with its outer sheath, armour and inner sheath removed. The links shall be of sufficient length to facilitate routine maintenance and allow for four subsequent re-terminations and shall not obstruct any other accessory. The Company shall maintain multi-pair colour coding so that colour code duplication does not occur. Care shall be taken at all times to maintain correct pairing. Unused ends of all conductors shall be neatly tied back.</p> <p>1.9 Where the Company requires to terminate multi-pair communication cables in existing multi-pair communication cable termination cabinets or cabinets which contain operational Traffic Scotland Equipment the Company shall comply with Clause 1522.</p> |
| <b>1514AA</b> | <p><b>1 Cable Connectors</b></p> <p>1.1 Cable connectors shall be as described within the New Works Requirements and be of a suitable industry standard for the cable type and intended use. Where required, the connectors shall be provided with suitable retaining clips to prevent vibration causing loosening of the connection.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>1515A</b>  | <p><b>1 Jointing and Termination of Fibre Optic Communications Cable</b></p> <p>1.1 Fibre Optic Communication cables shall be jointed and terminated in Combined Equipment Cabinets (CEC), Type 600(S) or within transmission stations using standard 1U 19" termination units and associated break out boxes.</p> <p>1.2 Within existing Transmission Stations, the Company shall use the existing fibre optic cable jointing and termination facilities or provide the same as existing fibre optic cable jointing and termination facilities if the existing facilities do not have the capacity to accommodate the fibre optic cable being provided in compliance with the New Works Requirements.</p> <p>1.3 Where fibre optic cables are required to terminate within a non-environmental enclosure then the cables shall be terminated in an</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |



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|               | <p>approved hermetically sealed box containing silica gel to prevent damage due to the occurrence of moisture. The fibres shall be fusion spliced and protected from mechanical strain. The fusion splicing shall not cause losses greater than that detailed in MCG 1055</p> <p>1.4 Unless required for equipment connection, all joints shall be permanent, fusion spliced type.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>1516A</b>  | <p><b>1 Termination and Jointing of Power Supply Cables for Traffic Scotland Equipment</b></p> <p>1.1 Underground joints may in limited circumstances be permitted on Scottish Motorways Communications system but only with the specific approval of the Overseeing Organisation and in compliance with NDS 9565 "Guidance on the use of standard Traffic Scotland termination pillars"</p> <p>1.2 Termination of power supply cables shall be undertaken in accordance with good working and recognised electrical engineering practices. Prior to commencing with power supply terminations the Company shall deliver to the Overseeing Organisation method statements and a Transport Scotland Issued Equipment power cabinet fully terminated and complete as evidence of the workmanship that will be provided as part of the Works</p> <p>1.3 Where the Company requires to terminate power supply cables in existing power supply cabinets or cabinets which contain operational Traffic Scotland Equipment the Company shall comply with Clause 1522.</p>                                                                                                                                                                                                                   |
| <b>1517A</b>  | <p><b>1 Earthing and Bonding</b></p> <p>1.1 The earthing and bonding of the Traffic Scotland installations shall comply with the recommendations contained in BS7671 and BS7430. Where required, further details of the earthing and bonding requirements may also be given in the New Works Requirements.</p> <p>1.2 The area of gland plates or boxes, which will come into contact with a cable gland shall be cleaned prior to fitting of all paint and, in existing equipment any corrosion, before a cable gland is fitted. Once the gland is fitted, exposed metalwork of gland plates or enclosures, where required, shall be suitably treated to protect against corrosion. Furthermore an appropriate earth tag forming part of the gland kit, and retained by the gland fixing nut, shall also be installed and connected to the main earth bonding point within the cabinet using correctly sized cable and crimps as required by the Electricity Safety, Quality and Continuity Regulations. This bonding cable shall be copper and have insulation coloured green/yellow – also see Clause 1517.5SR below.</p> <p>1.3 All connections to bolted fixtures shall be made through crimped type lugs and using correctly sized bolts with appropriate washers and lock</p> |

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|               | <p style="text-align: center;">nut all as NDX1002-01</p> <p>1.4 All Traffic Scotland Equipment cabinets grouped in close proximity shall be effectively earth bonded together in accordance with the requirements of BS7671 Requirements for Electrical Installations. The Company shall introduce correct and adequate earth bonding arrangements particularly when the cabinet group includes lighting or similar cabinets energised by a different Electricity Supply Company supply to the Traffic Scotland Equipment. It is the Company's responsibility to design the installation to ensure no high fault currents from earth faults on other systems enter the Passive Network.</p> <p>1.5 In all Traffic Scotland Equipment cabinets all SWA gland earth tags shall be installed within the cabinet and bonded together and to the cabinet earth stud using green/yellow insulated bonding wire unless otherwise required by applicable Regulations. This requirement applies to all SWA Communications and Power Supply cables.</p> <p>1.6 At all equipment sites where a power supply is installed it is a requirement that an earth rod be installed as follows:</p> <p>(a) If the Termination Pillar contains the DNO's cut out, then an earth rod will be installed adjacent to the Termination Pillar in accordance with the requirements of BS7671 and BS7430 to act as the Electricity Supply local protective earth.</p> <p>(b) Where Traffic Scotland equipment includes a mast or support introducing an increased risk of damage by lightning then a earth rod shall be installed adjacent to the cabinet as a communications local earth. The earth impedance of the earth rod shall be no greater than 10 ohms.</p> <p>1.7 All pillar, cabinet and Signal pole doors shall be earth bonded to the main structure chassis using a flexible 6 mm sq. green/yellow insulated conductor cable reference. The bonding conductor shall be sufficiently long as not to be strained when the doors are fully extended. Where crimp terminals are used these shall be sound in assembly and protected from strain typically using an insulated clip or similar retaining arrangement.</p> |
| <b>1518A</b>  | <p><b>1 Cable Testing</b></p> <p>1.1 Armoured communications cables shall be tested by the Company in accordance with the Specifications MCG1022 (for multi-pair communications cable) and MCG1055 (for optical fibre cable). The Company shall undertake tests on cables as detailed in this document and the Specification for Highway Works. Appendix 1/5. Scottish modifications to the MCG1022 are as follows :</p> <p>(a) Communications cables to MCE1173 shall be tested to MCG1022C paragraphs. 2.3.1. 2.3.3.(a), 2.3.4.(a) and 3.1. corrected as 1518.2</p> <p>(b) Communications cables to CW1128/1198 shall be tested to</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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|               | <p>MCG1022C paragraphs. 2.3.3.(a) , 2.3.4.(a) and 3.1. corrected as 1518.2</p> <p>(c) Power cables to BS6346 (3- core SWA) shall be tested to MCG1022C paragraphs. 2.3.2., 2.3.3.(b), 2.3.4.(b) and 3.2.</p> <p>1.2 Modifications to MCG1022C are as follows;</p> <p>(a) Para 1.5.2.</p> <p>i. delete "loading patterns"</p> <p>ii. delete "attenuation" and "impedance" diagrams in Appendix 2</p> <p>(b) Para. 3.1.</p> <p>i. Attenuation measurements shall be on all pairs at all listed frequencies.</p> <p>ii. No loading will be installed - all pairs treated as identical (600 ohms)</p> <p>iii. Graphs shall be produced to cover all pairs</p> <p>(c) Para. 3.1.5. Measurement of Near End cross talk with 600 ohm termination only.</p> <p>(d) Para. 3.1.6 Not undertaken</p> <p>(e) Para. 3.1.7. To be carried out on all pairs.</p> <p>(f) Para. 3.1.8 Not undertaken</p> <p>(g) Para. 3.1.9 Not undertaken</p> <p>(h) Para. 3.1.10 Not undertaken</p> <p>(i) Para. 3.1.11 Not undertaken</p> <p>(j) Telephone pair test: Measure loop resistance to telephone and note value. (Max. 29ohms/Km) and using 600 ohm termination measure attenuation at 800Hz to telephone and note value. (Max. 0.74dB/Km).</p> <p>1.3 All Cables, both optical fibre and copper, supplied by the Company to specification shall be tested in accordance with MCH1221 at the manufacturer's works prior to delivery to ensure compliance with those specifications and the testing shall be witnessed by a specialist consultant appointed by the Company.</p> <p>1.4 Loop detector and feeder cables shall be tested in accordance with Clauses 1523 and 1537.</p> <p>1.5 Power cable testing shall be carried out in accordance with both MCG1022 and BS7671 and Clause 1526. The Overseeing Organisation may appoint a specialist consultant to witness all testing.</p> <p>1.6 No site cable tests shall be carried out until the cable trench containing the cable duct has been back-filled and the ground above the cable</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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|               | <p>reinstated and the cable ends have been installed (un-terminated) in the respective termination cabinets. No site cable tests shall be carried out until all the cables to be installed in one duct have been installed. No site cable tests shall be carried out until adjacent work, which may damage the cable have been completed.</p> <p>1.7 Cable test result documentation shall be in compliance with clause 1504 and Clause 1540. The cable being tested and the instruments being used to complete the test shall be clearly marked on each cable test result.</p> <p>1.8 The Company shall provide all safety equipment, display warning notices, erect barriers and ensure trained personnel are present at all points where dangerous voltages may be present during testing.</p> <p>1.9 All test instruments requiring calibration shall have a current calibration certificate. Copies of the calibration certificate covering the whole period of cable testing shall be provided with the cable test results.</p> <p>1.10 The Company shall give at least 14 days' notice, in writing, to the Overseeing Organisation of his intention to test any cable and shall be provided with the opportunity to witness the installation of all cables.</p> <p>1.11 In the event of the Company drawing further cables through a duct after cables have been tested, then all cables in the duct shall be re-tested.</p> <p>1.12 Any cable damage identified shall be rectified by the Company in accordance with sub-clause 1550. and re-tested.</p> |
| <b>1519A</b>  | <p><b>1 Labelling and Numbering</b></p> <p>1.1 All Traffic Scotland equipment when detailed in drawings and documentation prepared by the Company shall be numbered in accordance with the Traffic Scotland Equipment numbering scheme in the NDX series drawings and the New Works Requirements. The Company shall not use any other equipment numbering at anytime.</p> <p>1.2 Cabinets, Emergency Roadside Telephones, Signals, and cables shall be numbered and labelled, in accordance with the relevant NDX drawings, using Traffic Scotland labelling procedures and, unless specified otherwise in the New Works Requirements, it shall be the responsibility of the Company to provide such manufactured labels. All equipment labels shall be attached in accordance with the NDX series drawings unless otherwise described in the New Works Requirements.</p> <p>1.3 The Company shall not leave cables unlabelled at any time and shall provide temporary labelling accordingly to facilitate testing and termination prior to the implementation of permanent labelling.</p> <p>1.4 All cabinets containing power shall be labelled to indicate the source of supply, destination, circuit arrangements and details of testing in accordance with the BS7671 regulations. Cabinets shall also include a</p>                                                                                                                                                                                                                                        |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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|               | <p>copy of the applicable electrical schematic.</p> <p>1.5 All cabinets containing Traffic Scotland Equipment shall have the circuit diagrams of both the cabinet and the external cable circuits stored within the cabinet so that the maintenance engineer can understand the cable connections and cable routing. These circuit diagrams, shown on a single A3 sheet, should be an extract of the as built drawings and should be supplied in a modifiable electronic form to the Overseeing Organisation as part of the documentation requirements.</p> <p>1.6 All records contained within cabinets shall be waterproof and version controlled.</p> <p>1.7 Where the Company carries out modification work to existing cabinets, new labels shall be fitted where appropriate and shall update the existing records in compliance with the New Works Requirements.</p> <p>1.8 All standard warning labels shall be supplied by the Company and installed on cabinet doors.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>1520A</b>  | <p><b>1 Loading</b></p> <p>1.1 Not used.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>1521A</b>  | <p><b>1 Removal and Re-siting of Existing Equipment</b></p> <p>1.1 Prior to existing Traffic Scotland Equipment being removed/re-sited as determined by the design, the Company shall provide a report titled "Strategy of ITS New Works for Traffic Scotland Equipment Document" in accordance with the New Works Requirements.</p> <p>1.2 Unless otherwise described in the New Works Requirements, the Company shall remove and dispose of all existing equipment in compliance with this 1500 Series.</p> <p>1.3 Where required in accordance with "Strategy of ITS New Works for Traffic Scotland Equipment Document", as prepared by the Company under Clause 1521.1SR, the disconnection and reconnection of Traffic Scotland Equipment shall either be witnessed or undertaken by the Traffic Scotland Operator and Infrastructure Service Contractor in compliance with Clause 1522SR.</p> <p>1.4 All Traffic Scotland Equipment that has not to be disposed of shall be stored by the Company until required or returned to Overseeing Organisation stores. The Company shall store equipment to be returned to the Overseeing Organisation for a period of up to 3 months or as otherwise detailed in the New Works Requirements.</p> <p>1.5 Items of equipment to be re-sited shall be unbolted from their plinths or supports together with their holding down bolts, stored, and removed or re-sited. Where any foundations, support infrastructure and hard landscape associated with existing site is not required in the future the Company shall undertake all necessary site clearance in compliance</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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|               | <p>with Clause 201 of the Specification.</p> <p>1.6 Conductors shall be disconnected from the equipment in which they are terminated, the terminal screws and glands re-tightened and the cable withdrawn clear of the equipment.</p> <p>1.7 Where cables are to be recovered, they shall be carefully withdrawn, and the Company shall comply with the requirements for duct sealing, cleaning and roping. Recovered cables shall be coiled onto drums at the time of removal and transferred to the Company's site storage area for subsequent re-use or removal to the Overseeing Organisation's Store, unless otherwise detailed in the New Works Requirements.</p> <p>1.8 The sites of cabinets, plinths and cable trenches shall be reinstated to the level of the surrounding ground as in Clause 201 of the Specification, unless otherwise described in the New Works Requirements.</p> <p>1.9 All re-used cables shall be tested in accordance with Clause 1506SR and 1507SR.</p> <p>1.10 Where cables are being disconnected and removed, or being disconnected and left in situ, the operation shall be carried out in a safe manner which does not form a hazard to maintainers, operators or Users and shall be in compliance with the New Works Requirements.</p>                                                                                                                                                                                                                                                              |
| <b>1522A</b>  | <p><b>1 Works Impacting on Operational Traffic Scotland Systems</b></p> <p>1.1 All works shall be programmed and planned to prevent any detrimental impact on the operation of Traffic Scotland Equipment and systems in accordance with the "Strategy of ITS New Works for Traffic Scotland Equipment Document" which forms part of the New Works Requirements. The details of the works to mitigate the impact on the Traffic Scotland Service or part thereof shall be prepared by the Company and made available to the Overseeing Organisation and the relevant Traffic Scotland Service providers prior to the start of such works. Notification of any such mitigating arrangements shall, unless otherwise stated within the New Works Requirements be no less than 28 days prior to the works commencing.</p> <p>1.2 Detrimental impact may include but not be limited to loss of service due to cable damage, loss of electrical supply or communications link or damage to equipment and similar.</p> <p>1.3 Mitigating arrangements may include temporary equipment housing, temporary electrical supply, temporary communications link by copper cable, optical fibre cable, line-of-sight microwave or similar or combinations of these.</p> <p>1.4 Where no alternative is available, the Company shall provide documentation detailing all the investigated alternatives.</p> <p>1.5 Where migrating arrangements introduced by the Company fail to correctly protect the operation and integrity of the Traffic Scotland</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|               | systems and equipment the Contracting Authority shall, at his own discretion, seek to claim damages in accordance with the New Works Requirements.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>1523A</b>  | <p><b>1 Loop Detectors</b></p> <p>1.1 Where required and unless otherwise described in the New Works Requirements, the Traffic Scotland Loop detectors shall be installed in accordance with Specification MCH1540 and NDX 1007.</p> <p>1.2 The roadside loop chamber as described in Clause 1532 shall be installed prior to the detector loops being installed and at the completion of detector loop installation all loop tails shall be located within the roadside loop chamber and each tail shall be labelled.</p> <p>1.3 Slots for the detector loops shall be cut from within the base course level.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>1524A</b>  | <p><b>1 Trial Pits</b></p> <p>1.1 Trial pits shall be excavated by the Company to determine the location of Traffic Scotland Equipment located below the surface. The use of mechanical digging methods is prohibited.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>1525A</b>  | <b>1 Not Used</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>1526A</b>  | <p><b>1 The Inspection and Testing of Electrical Installations and Electrical Equipment</b></p> <p>1.1 The Company shall carry out all works associated with the Inspection and Testing of Electrical Installations in compliance with BS7671 and Guidance Note 3 for BS7671 and for equipment not forming part of the fixed installation be in accordance with the latest edition of "Code of Practice for In-service Inspection and Testing of Electrical Equipment" published by the IET. The Company shall provide paper copies of the Inspection and Completion Certificates to the Overseeing Organisation in accordance with BS 7671 and also in 'soft copy'. Both paper and softcopy shall generally conform with the NICEIC format for BS7671 Certificates and be compatible with Industry standard archiving software.</p> <p>1.2 Where the Inspection/Tests show that existing cabinets or electrical circuits, or the earthing arrangements do not meet with the requirements of BS 7671, the Company shall make the installation safe and carry out all such works to make the installation compliant with BS7671. When designing the electrical installation, the Company shall take fully into account all aspects of access for maintenance. Also, where the Company considers safety and operational risks associated</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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|               | <p>with quarterly testing of a Residual Current Device (RCD) to be unacceptable an alternative design must be provided.</p> <p>1.3 For the purposes of carrying out the Tests the Company shall use appropriate instruments which shall be tested and calibrated at six monthly intervals. Copies of the test/calibration certificates shall be forwarded to the Overseeing Organisation with the first certificate dated within three months of the Commencement Date. The Earth Loop Impedance testing instrument shall be of the digital display type and shall operate from zero to 19.99 Ohms (Accuracy <math>\pm 1\%</math> ES. <math>\pm 1.5\%</math> Reading) with 0.01ohm Resolution. Where alternating current measurements are required, testing instruments shall be of the digital display type and shall be capable of operation with an accuracy of <math>\pm 1\%</math> in the useable ranges.</p> <p>1.4 Where appropriate and prior to testing the installation in accordance with the requirements of BS7671 all extent and limitations to be applied must be agreed with the Overseeing Organisation. The agreed extent and limitations must include consideration of all cables and equipment making up the installation that may be required to be excluded from the testing of the fixed electrical installation.</p> <p>1.5 Such electrical equipment not forming part of the fixed wiring of the installation shall be disconnected while carrying out BS7671 testing on the electrical installation. Items so excluded from the BS7671 inspection and testing shall be inspected and tested in accordance with the HSE publication "Maintaining portable and transportable electrical equipment" HSG107 and the "Code of Practice for In-service Inspection and Testing of Electrical Equipment" or as otherwise agreed with the Traffic Scotland Manager. The frequency of the inspection and testing of such equipment shall be appropriate for the equipment type, its frequency of use and environment in which it is used.</p> <p>1.6 The frequency of inspection and testing of fixed installations shall be;</p> <ul style="list-style-type: none"> <li>(a) Periodic BS7671 Inspection and Testing – 5 yearly</li> <li>(b) Routine Check as BS7671 Guidance Note 3 – Annually</li> <li>(c) Where RCDs are an integral part of the installation earth fault protection then the RCDs shall be tested quarterly. TT supplies shall not form part of the permanent electrical supply infrastructure. RCDs shall be tested at minimum load.</li> </ul> <p>1.7 The Company shall provide all safety equipment, display warning notices, erect barriers and ensure personnel with suitable skill and ability are present at all points where dangerous voltages may be present during testing.</p> |



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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| 1527A         | <p><b>1 Cable Installation at Transmission Stations</b></p> <p>1.1 Cables shall be installed into and terminated within Transmission Stations in compliance with the New Works Requirements.</p> <p>1.2 Work shall not be undertaken in active Transmission Stations by the Company until the Company is in compliance with Clause 1522.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1528A         | <p><b>1 Modification of Existing Cabinets</b></p> <p>1.1 The Company shall terminate new cables, terminate diverted cables, install Traffic Scotland Equipment and undertake such other modifications to existing Traffic Scotland Equipment cabinets in compliance with the New Works Requirements and this 1500 Series.</p> <p>1.2 The Company shall, prior to laying any underground duct or cable to or from the existing Traffic Scotland Equipment cabinets, locate, by electronic means, the position of all cabling and ducting, expose all cables and ducts by careful hand excavation and identify the type, size and designation of each cable found.</p> <p>1.3 The Company shall as required undertake any or all of the following as required to comply with the New Works Requirements</p> <ul style="list-style-type: none"> <li>(a) remove, retain for re-use, and replace the cabinet base pea gravel;</li> <li>(b) remove and relay any hard standing;</li> <li>(c) remove all redundant materials and make good soft landscaping;</li> <li>(d) excavate to expose cable remake loop;</li> <li>(e) excavate duct and cable routes;</li> <li>(f) re-route cable to gain sufficient lengths for the proposed modification;</li> <li>(g) reinstate duct and cable trenches;</li> <li>(h) break open and re-seal resin filled base;</li> <li>(i) disconnect and reconnect, undo existing gland and re-gland, including the provision of new gland assemblies and cable termination ancillaries where required;</li> <li>(j) withdraw and reinstall cables at cabinet base;</li> <li>(k) un-terminate, re-terminate and terminate cables;</li> <li>(l) remove and or relocate existing Traffic Scotland Equipment and install new Traffic Scotland Equipment and connect internal wiring</li> <li>(m) reroute and provide new internal wiring to create a tidy wiring and incoming outgoing cable layout;</li> <li>(n) modify power distribution unit by adding or removing outgoing</li> </ul> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|               | <p>circuits and adding or altering the electrical distribution protection devices;</p> <p>(o) remove all waste and redundant material and clean out the cabinet;</p> <p>(p) renew external labels;</p> <p>(q) undertake any works such as painting, replacing locks, hinges and general cabinet maintenance works such as oiling and greasing the hinges, adding a document holder ; and</p> <p>(r) updating records and inserting records to be held in cabinet.</p> <p>1.4 All existing direct buried cables exposed during modification of existing Traffic Scotland Equipment shall be installed in ducting laid in compliance with Clauses 1530SR and 1531SR. Also where remake loops in direct buried cables are exposed, Type C chambers shall be constructed to accommodate the remake loop.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>1530A</b>  | <p><b>1 Cable Ducts</b></p> <p>1.1 The term cable duct used in this Series describes the ducts used for Traffic Scotland Equipment communication and power cables.</p> <p>1.2 Longitudinal ducts are those ducts forming the longitudinal route of ducts installed generally parallel to the carriageway. Transverse ducts are those ducts linking the longitudinal ducts and installed underneath and at right angles to the carriageway. Local ducts are those ducts installed from chambers forming part of the longitudinal duct network to the cabinets and Traffic Scotland Equipment</p> <p>1.3 The ducts installed to this specification are used for all types of Traffic Scotland cables</p> <p>1.4 The ducts shall comply with this Series and the New Works Requirements. The Company shall be responsible for ensuring that all components used within the ducts are compatible with each other, with the cable and with existing ducts to which they may be connected.</p> <p>1.5 The ducts shall comply with the general requirements of BS EN 50086-1 and in particular requirements of BS EN 50086-2-4. The ducts shall have a current British Board of Agreement Roads and Bridges Certificate or equivalent in accordance with Clause 104 of the Specification.</p> <p>1.6 The ducts shall be manufactured from thermoplastic material. The internal bore shall be smooth and even. The external surface shall be even or corrugated in the longitudinal section. The ducts shall be twin walled. Non homogeneous ducts with honeycomb or foam filled construction between the inner and outer surfaces shall not be permitted.</p> <p>1.7 The longitudinal, transverse and local ducts shall meet BS EN 50086-2-</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|               | <p>4 and be classified as "Normal duty" and rigid. These ducts will be supplied and laid in lengths no greater than 6 metres and be jointed using compatible couplers, sealing rings and lubricant. Rigid smooth walled pre-formed bends and junctions shall be used. Pliable or flexible ducting shall not be used to provide a continuous route.</p> <p>1.8 The nominal sizes of the ducts shall be as described in the New Works Requirements. The minimum internal diameters shall be 150 mm, 100 mm and 50 mm.</p> <p>1.9 The external wall of the ducts shall be coloured black for all Traffic Scotland installations regardless of whether they contain power or communications cable.</p> <p>1.10 The materials from which the duct and fittings are made shall be treated so that they are protected from the deleterious effects of short term exposure to ultra violet light and shall be resistant to degradation by acids, alkalis, common chemicals, bacteria, fungi, and moulds occurring in soils. The Company shall protect the duct and fittings on site in accordance with the supplier's recommendations.</p> <p>1.11 Each duct shall be fitted with a pigmented, stranded polypropylene or equivalent rot-proof material draw cord of 5kN breaking load and having a design life of not less than 20 years, the ends of which shall be secured within the chamber or enclosure to which the duct is terminated. Draw cords shall be secured to the duct plugs where fitted. Draw cords shall not be knotted within ducts; where a joint is required it shall be a spliced joint.</p> <p>1.12 The duct network shall be sealed in compliance with Clause 1533.</p> <p>1.13 Ducts containing Traffic Scotland cables or power cables for motorway communications systems installed on motorways shall be clearly and permanently marked with the legend "MOTORWAY COMMUNICATIONS /POWER" in two, diametrically opposite, planes. The ducts shall be installed such that the legend is uppermost. The method of marking shall not affect the integrity of the duct. This marking is in addition of the markings required in the BS EN 50086 series. The method marking and the durability test shall comply with the BS EN 50086 series.</p> <p>1.14 Each duct shall be fitted with a proprietary branded duct insert as shown in NDX1063-00.</p> <p>1.15 Four and six way ducts shall be supplied with purpose made spacers and strapping as indicated on drawing NDX1063-00. The strapping shall bind the ducts tightly in the specified formation during installation, back-filling and for the whole life of the duct. The spacing of the strapping shall be such that the ducts shall not separate by more than 50 mm; this spacing would typically be 1m. The contact area between spacer and duct shall be large enough to ensure that the spacer cannot penetrate or distort the walls of the duct.</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| <b>1531A</b>  | <p><b>1 Installation of Ducts</b></p> <p>1.1 Ducts shall be laid at the level as shown in NDX1063-00 and at a typical offset of 2 metres from the edge of the carriageway. Longitudinal ducts shall generally be run parallel to the edge of the hard shoulder. Transverse ducts shall run at right angles to the carriageway. The exact location of the ducts shall be in accordance with the drawings or where applicable the Company's Design. All ducts shall terminate in an access chamber. Excavations shall comply with Clauses 502 and 602. Immediately following the excavation of the trench, the ducts shall be jointed and laid on the bedding material. Newly laid ducts shall not deviate unnecessarily from straight such as to cause undue loading on the cables during installation. The deviation in level from that specified at any point shall not exceed 50mm</p> <p>1.2 Ducts and fittings shall be examined for damage and the joint surfaces and components shall be cleaned immediately before laying. Measures shall be taken to prevent soil or other material from entering ducts, and to anchor each duct to prevent movement before the work is complete.</p> <p>1.3 Cable ducts shall comply with the appropriate British Standard and shall be tested in accordance with Clause 1533. Ducts with push-fit joints shall have a register and clear markings to ensure that the duct joint is fully engaged.</p> <p>1.4 Cable duct configurations, bedding, haunching and surround shall be as shown on drawing NDX1063-00.</p> <p>1.5 Backfilling shall be undertaken immediately after the required operations preceding it have been completed.</p> <p>1.6 Trenches for the cable ducts shown on drawing NDX1063-00 shall be backfilled with Class 8 lower trench fill material, as described in Table 6/1 and in compliance with the 600 Series, which shall be placed above the surround material. The Class 8 material shall extend to within 150 mm of ground level. The material shall be spread and compacted evenly without dislodging, disturbing or damaging the ducts. Power hammers shall not be used within 300 mm of the ducts.</p> <p>1.7 For ducts shown on drawing NDX1063-00, top soiling, grass seeding and/or turfing as described in Clause 618 and 3005 shall be placed in the top 150 mm of the cable duct trench unless otherwise specified in the New Works Requirements.</p> <p>1.8 For ducts shown on drawing NDX1063-00 marker tape shall be laid within the trench excavation at a depth of 150 mm or at the class A/topsoil interface whichever is the greater. The marker tape shall comply with Clause 1511.</p> |

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| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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|               | <p>1.9 Prior to mandrelling, the Company shall swab through each duct to clear all debris.</p> <p>1.10 Ducts that are laid across or within the filter drains (French drains) shall be surrounded with 150 mm of mix ST2 concrete in compliance with Clause 2602. In the event that the route of a duct comes within 500mm of the line of a filter drain then either an alternative line shall be determined or precautions taken to ensure that the granular infill used to surround the ducting cannot, over time, compromise the integrity of the filter drain by migration of the infill material into the drain. Any damage caused by the Company to any drain shall be repaired to the satisfaction of the Overseeing Organisation and at no cost to the Contracting Authority.</p> <p>1.11 Unless otherwise described in the New Works Requirements the Traffic Scotland Equipment duct network comprises of :</p> <ul style="list-style-type: none"> <li>(a) quad 100mm inside diameter sealed longitudinal communication ducts installed along both verges terminating at each roadside longitudinal Type A chamber constructed at each equipment site and at transverse duct locations and additional locations such that no duct run is greater than 250m. A nominal spacing of Type A chambers shall be 250m centres. Additional Type A chambers shall be provided where changes of level or direction occur.</li> <li>(b) Six way 100mm inside diameter sealed communication ducts at carriageway cross connection points terminating at each roadside longitudinal Type A chamber at frequencies detailed in the New Works Requirements and at both extents of entry/exit slip roads.</li> <li>(c) single 100mm inside diameter local ducts as typically shown in NDX1063-00;</li> <li>(d) Single 50mm inside diameter local ducts as NDX1063-00 to provide for cables connecting to the Emergency Roadside Telephones.</li> <li>(e) Single 150 mm inside diameter local power ducts for power cable connection from Termination Pillar to Traffic Equipment Distribution Pillars where not local to the CEC.</li> </ul> |
| <b>1532A</b>  | <p><b>1 Chambers for Traffic Scotland Cables</b></p> <p>1.1 Chambers shall be either a Type A, B, C or Loop chamber (Type D). Chambers Type A, B and C are rectangular in plan with a standard plan size and are constructed so that their covers are raised 50mm above the level of the adjacent ground. Type A and B are shown in the drawings NDX1063-01 and NDX1063-02. Type C is shown on NDX1063-03. The construction of the Detector Loop roadside chamber is shown in NDX1063-04.</p> <p>1.2 Chambers shall be used solely for Traffic Scotland Equipment.</p> <p>1.3 Unless otherwise described in the New Works Requirements, the</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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|               | <p>following chamber types shall be installed at the locations as follows:</p> <ul style="list-style-type: none"> <li>(a) Type A chambers shall be placed between 400m and 500m intervals along the length of the longitudinal ducts in both verges. The chambers shall be installed at the same chainage in both verges. Additionally, six way transverse ducts installed at gantry locations and at 400-500m intervals.</li> <li>(b) Type A intermediate chambers shall also be installed in both verges along the longitudinal ducts midway between chambers detailed in the sub clause 1532.3SR (i) so providing duct access at between 200 and 250m intervals. At these intermediate chambers no transverse ducts are required to be installed. .</li> <li>(c) A cable stowage Type C chamber shall be constructed adjacent to all individual or group of communications cable termination cabinets and at other locations where cable service loops are required.</li> <li>(d) Additional Type A chambers where Traffic Scotland Equipment site is not adjacent to the Type A chambers detailed in sub clause 1532.3SR (i) and (ii)</li> <li>(e) Additional Type A chambers for cable access shall also be constructed wherever the associated ducts change level or direction;</li> <li>(f) Type A or Type B chambers shall also be constructed as required to accommodate local ducting containing Electricity supply or Private wire interface cables.</li> </ul> <p>1.4 Roadside Loop Chambers shall be installed in the verge adjacent to each Traffic Scotland vehicle detection site and each National Traffic Data Service vehicle classification detection site.</p> <p>1.5 Foundations to chambers shall be of mix ST4 concrete in accordance with Clause 2602.</p> <p>1.6 Brickwork shall comply with the 2400 Series and be built with mortar designation (i) in English bond. The joints of brickwork where exposed shall be finished as specified for un-pointed joints in Clause 2412. The ends of all ducts shall be neatly built into the brickwork and finished flush with mortar designation (i).</p> <p>1.7 Chambers not exceeding 1.3 metres in depth to invert may be constructed from complete plastic units or other units in equivalent material. Where the units do not meet the loading requirements of BS 5911: Part 200, they shall be surrounded by 150 mm of mix ST4 concrete. Where preformed plastic chambers are used with duct entries then correctly located round duct access holes shall be core cut to provide a clearance fit on each duct. The outer surface of the ducts shall be sealed against the chamber wall using epoxy putty or similar as required by the manufacturer’s instructions. No more than 6 off 100mm diameter ducts shall enter on a single wall. Unless otherwise agreed</p> |

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|               | <p>with the Overseeing Organisation plastic chambers shall be installed in accordance with, the manufacturer's instructions and this Series 1500.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 1.8           | <p>Where the depth of invert of chambers exceeds 900 mm below the finished surface of the carriageway or the adjacent ground, manhole steps complying with BS 1247: Part 1 or Part 2 shall be built in as specified in BS 5911: Part 200. Steelwork fittings shall comply with BS 970: Part 1 and be galvanised in compliance with Clause 1909 after fabrication. Threaded components shall be galvanised in compliance with Clause 1909. The depth of chambers shall not exceed the dimensions given in the NDX series drawings.</p>                                                                                                 |
| 1.9           | <p>Excavation around chambers shall be backfilled with general fill materials as described in Table 6/1 and compacted in compliance with Clause 612. Where mechanical compaction is impracticable, the excavation shall be backfilled with mix ST2 concrete complying with Clause 2602. Where there are pre-cast concrete access shafts to pre-cast or similar concrete chambers, the shafts shall be surrounded by a minimum thickness of 150 mm of mix ST4 concrete, and the remaining excavation backfilled with general fill material as described in Table 6/1 compacted in compliance with Clause 612 of the Specification.</p> |
| 1.10          | <p>Chamber covers and frames shall be suitable for purpose to comply with BS EN 124 and be agreed by the Overseeing Organisation. Special duty covers for use in carriageways and other special situations shall be as agreed with the Overseeing Organisation.</p>                                                                                                                                                                                                                                                                                                                                                                   |
| 1.11          | <p>A concrete apron shall be provided at all Traffic Scotland chambers in accordance with the NDX Drawings. Such aprons shall be constructed to provide adequate surface run-off and should generally be arranged to form a continuous and level hard standing area joining with the access pathway and other such adjacent paved or concrete aprons. Under no circumstances should the chamber apron form any part of safety fence foundations or similar civils construction.</p>                                                                                                                                                   |
| 1.12          | <p>Four sets of lifting keys shall be delivered to the Overseeing Organisation for each type of cover supplied. Additionally, a suitable cover lifter shall be delivered to the Overseeing Organisation.</p>                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 1.13          | <p>Frames for chamber covers shall be set in cement mortar designation (i) complying with Clause 2404 or a suitable proprietary quick setting mortar of equivalent strength.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1.14          | <p>Chambers shall be constructed with a sump as shown in the NDX Drawings. This sump shall be constructed to drain into a soak away immediately below the chamber. It is a requirement of this specification that the chamber drainage is adequate to minimise the accumulation of water in the chamber. Under no circumstances should running water be allowed to drain through the chambers.</p>                                                                                                                                                                                                                                    |
| 1.15          | <p>Chambers shall be clearly identified by the legend "MOTORWAY COMMUNICATIONS"; the lettering shall be 25 mm high and shall be embossed into each cover. Where covers have a concrete infill a plate</p>                                                                                                                                                                                                                                                                                                                                                                                                                             |

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|               | <p>manufactured from a non-corrodible metal or steel, galvanised in accordance with Clause 1909, shall be cast into the concrete flush with the concrete surface.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>1533A</b>  | <p><b>1 Proving and Testing of Ducts</b></p> <p>1.1 Longitudinal and transverse ducts shall be proved by drawing a wooden or plastic mandrel as shown on HCD Drawing I2 through the ducts. Local ducts shall be proved by drawing through each length of completed duct a spherical mandrel of a diameter 10% less than the nominal bore of the duct. On the successful completion of each mandrel pull the Company shall certify compliance of the duct and immediately plug the duct in accordance with Clause 1530.</p> <p>1.2 All longitudinal and transverse ducts shall be tested in sections, e.g. between chambers, by means of the air test described in sub-Clause 3 of this Clause after backfilling. On the successful completion of each test the Company shall certify compliance of the duct and immediately plug the duct in accordance with Clause 1530.14</p> <p>1.3 To undertake the air test, air shall be pumped into the duct by suitable means until a stable pressure of 100 mm head of water is indicated in a U-tube connected to the system. The air pressure shall not fall to less than 75 mm head of water during a period of five minutes without further pumping, after an initial period to allow for stabilisation.</p> <p>1.4 A register of mandrel and air test certificates shall be maintained by the Company and handed to the Overseeing Organisation on the successful completion of the ducting work.</p> <p>1.5 Unless otherwise described in the New Works Requirements, the Company shall provide and install in the end of every duct at every point of entry into cabinets, purpose made push fit duct inserts/end caps. These inserts/end caps will be installed in a fashion to allow the polypropylene draw cord to pass through. NDX drawing 1063-00 sheet 7 of 10 refers.</p> |
| <b>1534A</b>  | <p><b>1 Closed Circuit Television</b></p> <p>1.1 Closed Circuit Television (CCTV) typically consists of cameras, associated masts, Pan Tilt and Zoom (PTZ) units, camera mast cables and video transmission equipment.</p> <p>1.2 At sites remote from gantry locations, the Company shall design and install a camera mast foundation in accordance with the standards detailed in the mast manufacturer's instructions, the New Works Requirements and typically described in the NDX1010 Series Drawings.</p> <p>1.3 All Sites shall be designed and configured to enable safe maintenance and access.</p> <p>1.4 At gantry locations, the Company shall design and install a camera</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |



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|               | <p>most fixing arrangement in accordance with the standards detailed in the mast and CCTV manufacturer's instructions, the New Works Requirements and the Agreement Drawings.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>1535A</b>  | <p><b>1 Variable Message Signs</b></p> <p>1.1 Variable Message Sign equipment will consist of a variation of Sign types and mounting arrangements as stated within the New Works Requirements.</p> <p>1.2 Where the Company provides and installs VMS foundations and associated infrastructure these shall be in accordance with the standards and requirements detailed in the Agreement Documents. NDX1001-02 describes a typical ladder arrangement to satisfy the access requirements of the equipment to be installed.</p> <p>1.3 Cabinet types shall be in line with typical gantry requirements.</p> <p>1.4 Any ducting required to pass through the foundation shall comply with the New works Information.</p>                                                                                                                                                                                                                                                                                                                                                          |
| <b>1536A</b>  | <p><b>1 Traffic Monitoring Units</b></p> <p>1.1 Traffic Monitoring Units shall be installed in the types of cabinets as described in the New Works Information.</p> <p>1.2 Cabinets housing TMU's shall be co-located at other Traffic Scotland Equipment sites. The length of feeder cable connecting the loop tails to the TMU shall not exceed 200 metres. Within the cabinet housing the TMU the loop feeder cables shall be terminated in terminal blocks complying with Clause 1514, secured to the equipment frame. Terminal screw tightness shall be within the range 0.4 to 0.6 Nm. Each feeder cable shall have a minimum of 3 metre of cable coiled in the chamber adjacent to the Cabinet housing the TMU to allow for subsequent re-terminations. Each feeder cable shall be individually identified in compliance with NDX1061-00.</p> <p>1.3 Where a standalone TMU site is required the Company shall provide all power and hard landscape in compliance with that required of any Traffic Scotland Equipment site and detailed in the New Works Information.</p> |
| <b>1537A</b>  | <p><b>1 National Traffic Data Service Detectors and Equipment</b></p> <p>1.1 An NDS site comprises of loop detectors providing vehicle parameters for all lanes and hard shoulders in both directions and NDS vehicle count equipment. Unless otherwise described in the New Works Requirements. NDS sites shall be installed in addition to Traffic Scotland vehicle detection sites but shall be co-located with a Traffic Scotland Equipment site unless specifically required to be standalone.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

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|               | <p>1.2 Where a standalone NDS site is required the Company shall provide all power and hard landscape in compliance with that required of any Traffic Scotland Equipment site and detailed in the New Works Requirements.</p> <p>1.3 The NDS Detectors and NDS equipment shall be provided as described in the New Works Requirements and this 1500 series.</p> <p>1.4 NDS equipment shall be installed within a specialist Transport Scotland Issued Equipment cabinet, suitably located and protected in full compliance with TD19.</p> <p>1.5 A D type chamber shall be provided adjacent to the cabinet for loop tail stowage.</p> <p>1.6 The distance between where the loop tails enter the verge and the detector unit shall not be more than 200 metres including any stowed loop tails.</p>                                                                                                                                                                                                                                                                                                                                                                         |
| <b>1539A</b>  | <p><b>1 Paved Areas, Access Paths, Access Steps and Hard standings</b></p> <p>1.1 Paved areas, access paths, access steps, handrails and hard standings shall be provided at each existing and new Traffic Scotland equipment site that the Company shall require to modify or provide. Each existing and new equipment site is unique and the Company shall provide and install paved areas, access paths, access steps, handrails and hard standings appropriate to each new and existing site.</p> <p>1.2 The general requirements for paved areas, access paths, access steps and handrails shall be as typically shown on NDX Drawings and detailed within the New Works Information.</p> <p>1.3 Hard standings shall be of a size and construction to provide safe parking of a vehicle off the hard shoulder. Such an arrangement shall be contiguous with the access pathway to the Traffic Scotland equipment and provide safe access for the maintenance engineer. Unless installed adjacent to an Emergency Roadside Telephone installation, the hard standing shall be constructed from open cementitious block and be typically as shown in the NDX1072-00.</p> |
| <b>1540A</b>  | <p><b>1 Required Documentation</b></p> <p>1.1 TR1100, and subsequent Scottish Amendments to TR1100 shall be considered as a general guide to Traffic Scotland deliverable documentation requirements. The final overall documentation package relating to the Traffic Scotland Equipment shall reflect inter alia the contents, requirements, structure and format as described in the Traffic Scotland NDS9001 'Traffic Scotland Health and Safety File Requirements and Model Forms'. Any significant changes with respect to this requirement shall be agreed with the Overseeing Organisation.</p> <p>1.2 All final As-Built Documentation as required by this Clause 1540SR forming all or part of the Traffic Scotland deliverable documentation</p>                                                                                                                                                                                                                                                                                                                                                                                                                   |

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|               | <p>shall be provided in accordance with the New Works Information.</p> <p>1.3 Documentation shall be made available to the Overseeing Organisation on request relating to Traffic Scotland Equipment until issue of the Performance Certificate.</p> <p>1.4 The Company shall provide new Traffic Scotland documentation in a style and format identical to the existing Traffic Scotland documentation as indicated in the Traffic Scotland Equipment Manual, the Traffic Scotland Maintenance Manual and the Traffic Scotland drawings. Where the Company is required by the Agreement to update existing Traffic Scotland documentation the Overseeing Organisation shall release the necessary Traffic Scotland documentation to the Company and the Company shall update the documentation. All such updated documentation shall be presented to the Overseeing Organisation for approval.</p> <p>1.5 The Company shall use current versions of AutoCAD™ computer software and Microsoft Word/Excel to provide or modify all Traffic Scotland Equipment documentation. All soft versions shall be supplied without any software restriction and shall be capable of being modified by the Overseeing Organisation. The standards and procedures for all CAD Drawings provided under the requirements of this Agreement shall comply with the New Works Information. All test results and test certificates shall be produced in a suitable software format or by an industry standard software package.</p> <p>1.6 An up to date Drawing/Document Register will at all times be maintained reflecting issue, revision dates, status and application. All changes to drawings, or documents, shall be indicated by a change of issue.</p> <p>1.7 Location measurements shall be taken of the underground equipment to the nearest 100mm from the nearest edge of the carriageway or fence line. Offsets to the cables/ducts shall be recorded at 20 metre intervals and at every change of direction along the line of the cable/duct. Offsets shall be defined longitudinally by distance from a permanent highway feature, a marker post or other point and agreed with the Overseeing Organisation. All details shall ensure compliance with the requirements of the Agreement relating to the NRSWA.</p> |
| <b>1541A</b>  | <p><b>1 Journey Time Equipment</b></p> <p>1.1 Journey time equipment shall be as described in the New Works Information</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>1542A</b>  | <p><b>1 Communications Equipment</b></p> <p>1.1 Communications equipment shall be as described in the New Works Information.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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| 1543A         | <p><b>1 Specific Equipment Commissioning, Testing Integration and Certification</b></p> <p>1.1 Specific equipment commissioning, testing, integration and certification shall be as described in the New Works Information.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 1544A         | <p><b>1 Power Supplies for Traffic Scotland Equipment</b></p> <p>1.1 Power supplies shall be provided in accordance with the New Works Information.</p> <p>1.2 All Electrical supplies shall be single phase and in accordance with NDS9551 "Requirement for electricity supply for Traffic Scotland and associated sites."</p> <p>1.3 Earthing and bonding shall be as Clause 1517SR.</p> <p>1.4 Inspection and Testing shall be to Clause 1526SR.</p>                                                                                                                                                                                                                                                                 |
| 1545A         | <p><b>1 Spares</b></p> <p>1.1 Unless otherwise stated in the New Works Information, spares shall be as described within NDS9001 "Traffic Scotland Health and Safety File Requirements and Model Forms"</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 1546A         | <p><b>1 Meteorological Equipment</b></p> <p>1.1 Meteorological Equipment does not normally form part of the Traffic Scotland Equipment. However where Meteorological equipment (weather stations) are required the meteorological equipment shall be located within a Traffic Scotland Equipment site and will consist of a combination of sensors and inputs at a roadside location which will include a roadside CEC/600 Cabinet type. The equipment type and layout shall be manufacturer specific and details will be provided by the Overseeing Organisation.</p> <p>1.2 Meteorological Equipment shall be provided and installed as described in the New Works Information and within the Agreement Drawings.</p> |
| 1548A         | <p><b>1 Enforcement Systems</b></p> <p>1.1 The Company shall install the necessary enforcement systems, mountings, power and communications in accordance with the requirements of the Agreement. This will be in accordance with the Agreement Drawings and as described in the New Works Information.</p>                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1549A         | <p><b>1 Weigh In Motion Equipment</b></p> <p>1.1 Weigh in Motion Equipment will consist of a series of specialist detectors providing detection for all lanes and both directions where required combined with a standalone detection unit.</p> <p>1.2 Weigh in Motion equipment shall be installed within a Type 600(S) cabinet, suitably located and protected in accordance with TD19/06.</p>                                                                                                                                                                                                                                                                                                                        |

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|               | <p>1.3 The Company shall install Weigh in Motion Equipment and all ancillary support systems in accordance with the requirements of the Agreement. This will be in accordance with the Agreement Drawings and as described in the New Works Information.</p> <p>1.4 Typical site layout and cabinet arrangement is shown in NDX1097-01.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>1550A</b>  | <p><b>1</b>      <b>Damage and Repair Procedures</b></p> <p><i>Reserved for completion by Traffic Scotland. Contact the Traffic Scotland Manager</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>1911SE</b> | <p><b>1</b>      <b>Paint and Similar Protective Coatings</b></p> <p>1.1 The term “paint” shall be deemed to refer also to similar protective coatings including specialist coatings such as grease paints.</p> <p>1.2 Where a registered paint is specified, the Company shall ensure that the paint conforms with the formulation which has been registered by the manufacturer with the Highways Agency on or before the date entered at Part 2 of Appendix 19/1 Form HA/P1 (Works) paint system sheet.</p> <p>1.3 All paints shall be supplied in sealed containers of not more than 5 litre capacity and these shall be used in order of delivery. Each container shall be of the completely removable lid type and be clearly marked on the side to show the name of the manufacturer, registered description of the material (including purpose, e.g. whether primer, undercoat or finish), colour, Item No, paint manufacturer’s reference number, batch number and date of manufacture. Where date of manufacture is coded, the Company shall provide the code key.</p> <p>1.4 The Company shall ensure that the properties of the paints he has selected are suitable for the conditions in the shops and on site, including temperature and humidity, and that he is able to apply the paints satisfactorily to all parts of the Structure in these conditions.</p> <p>1.5 Unless otherwise described in Appendix 19/5, all paints forming any one protective system, or overlapping systems, shall be obtained from the same manufacturer, as named by the Company in Form HA/P1 (Works) Paint System Sheet.</p> <p>1.6 The requirements of Sub-Clauses #1911.3, 7, 8, 9, 10 and their respective tables shall apply in Scotland.</p> |
| <b>1912SE</b> | <p><b>1</b>      <b>Testing of Paints</b></p> <p>1.1 Unless otherwise described in the this Contract, the Company shall provide unopened 5 litre samples, known as ‘A’ samples, of each type of paint to be used in the Works for testing for quality assurance purposes. ‘A’ samples shall be taken from the first batch of each type of paint delivered to the fabricator’s shop or site. In addition, during the painting work, the Company shall supply 500 millilitre samples, known as ‘B’ samples taken from painters’ kettles or from nozzles of airless</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**

| Clause Number | Title                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | <p>spray guns directly into clean new tins. For 2-pack systems separate samples of the base and activator shall be dispatched by the Company to the testing authority.</p> <p>1.2 Depending upon the importance of the proposed painting application, the Employer may elect to have 'A' samples sent for limited testing by a local paint testing firm or other agency specified by the Employer. Appropriate forms for use in connection with limited testing shall be derived from the standard paint forms and shall be agreed with the Employer.</p> <p>1.3 The Company shall supply paint in sufficient time to allow for sampling and testing of 'A' samples before the start of application. The Company shall be responsible for handling, provision of clean tins for samples, packing as necessary and prompt despatch and transit of all samples for testing.</p> <p>1.4 'A' and 'B' samples are tested for paint composition and / or properties against the original formulation issued by the paint manufacturer at the registration with HA.</p> <p>1.5 The requirements of Sub-Clauses #1912.10, 11 and 12 shall apply in Scotland.</p> <p>1.6 Except for procedure trials painting shall not start until the first of the 'A' samples are confirmed as satisfactory.</p> |
| <b>1920SE</b> | <p><b>1 Additional Requirements for the Protection of Steel in Bridge Bearings</b></p> <p>1.1 <b>Applicable Clauses</b></p> <p>1.1.1 Unless otherwise described in this Contract, the work described in this Clause shall be carried out in compliance with Appendix 19/1 and with Clauses 1901 to 1919 inclusive.</p> <p>1.2 <b>Supply of Coatings</b></p> <p>1.2.1 Information, including the name of the paint manufacturer, required for completing Form HA/P1 (Works) Paint System Sheet, for the bearings, shall be obtained by the Company from the bearing manufacturer.</p> <p>1.2.2 Item 155 and MIO Epoxy paints when required for application on site shall be obtained from the manufacturer of the shop applied coats. Paint applied to the bearings on site to match the bridge steelwork paint system shall be obtained from the manufacturer of that system.</p>                                                                                                                                                                                                                                                                                                                                                                                                          |

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**Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland**
**List of Minor Alterations Clauses, Tables and Figures**

| Clause Number | Title                                                                                                                                                                                                            |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1702.2        | <b>1 Concrete – Ordinary Structural – Constituent Materials</b><br>1.1 At end of <b>Clause</b> add the following:<br>The minimum testing frequency shall be in accordance with Table 3 of BS812: Part 120: 1989. |
| N/A           | <b>1 Appendix A, Page 8</b><br>1.1 Delete Note 2 and replace with the following:<br>The implementation date of this scheme is the Base Date.                                                                     |

**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority****1 Accommodation Required**

- 1.1 Office Accommodation for Period 1.
- 1.1.1 An integrated office building facility, on no more than two levels, comprising accommodation for shared occupation by the Contracting Authority and the Company shall be provided by the Company as the principal office with a single joint entrance and reception area, including shared conference room and messing facilities, car parking and security arrangements.
- 1.1.2 The principal office and hall accommodation shall accommodate up to forty five staff (Contracting Authority staff). Should the Company elect to utilise any satellite office(s) remote from the principal office, accommodation and equipment shall also be provided within each such satellite office for up to ten Contracting Authority staff.
- 1.1.3 The office buildings shall be constructed of secure 'anti-vandal' steel shell office-accommodation units or any system deemed suitable for temporary accommodation of this nature which is acceptable to the Contracting Authority. If proprietary units are proposed the Company shall provide a certificate from the manufacturer stating that the units have a design life of more than 10 years.
- 1.1.4 The office building facilities shall be connected to existing mains water, 240 volt AC electricity supply, and telecommunication utilities for provision of water, heating, lighting, telephone and broadband. The office building facilities may be connected to existing mains gas, should the Company wish to use gas, for cooking and/or heating purposes.
- 1.1.5 Sewage disposal shall be either direct to an existing piped mains facility or specially provided septic tank which shall be regularly serviced.
- 1.1.6 The office buildings shall comply with and be maintained to comply with the Construction (Health, Safety and Welfare) Regulations 1996. The Electricity at Work Regulations 1989 shall be complied with in all respects in the case of equipment and furnishing of rooms in the office buildings. The buildings and access routes shall also comply with the Disability Discrimination Act 2005 and the Equality Act 2010.
- 1.1.7 Prior to occupation the Company shall have the buildings appropriately certified by the local authority and Fire and Rescue Services as suitable for occupation and use intended.
- 1.1.8 The office accommodation for the use of the Contracting Authority and all facilities to be shared with the Company shall be to a high standard of, including but not limited to, structural integrity, aesthetics, internal finishing, equipment and furniture as described below.
- 1.1.9 The location and layout of the integrated office facilities shall be wholly acceptable to the Contracting Authority whilst conveniently located in close proximity to, and possibly overlooking, the construction works. The integrated office building facilities shall be set apart from the Company's site operations plant store and depot and routes used by construction traffic. Car parking areas shall be set apart from plant, machinery and construction vehicle storage / parking areas.
- 1.1.10 The office buildings shall also be provided with a separate entrance and lobby area away from the main entrance, conveniently located within its layout for direct access by personnel of the Contracting Authority and Company when either visiting or returning from the New Works Site for purpose of changing into or removing/cleaning and storing boots and safety gear.
- 1.1.11 Doorway entrances and access-ways to the office buildings shall comply with the Disability Discrimination Act 2005 and shall be provided with suitable handrails.



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**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

- 1.1.12 The Company shall form a 3 metre wide access from the public road and provide car parking at the principal office allowing space for 40 number Contracting Authority vehicles and 10 number visitor's cars. Parking space for the Contracting Authority for six cars shall be provided at any satellite offices.
- 1.1.13 Fire exit routes from the office buildings shall be in accordance with relevant safety standards and shall be approved by the Fire and Rescue Services. Exit routes shall, as a minimum, be of concrete slabs or bituminous surface free from steps and other obstacles and shall be constructed so as to enable rapid and efficient drainage.
- 1.1.14 All road surfaces and access to the public road connected with the office buildings shall be constructed on prepared ground and covered with bituminous surfacing and have positive drainage.
- 1.1.15 The access roads and car park areas shall have a bituminous surface and the access roads shall be kept clear of snow, ice, frost, mud and debris and shall not be used by construction plant. Car parking areas shall be kept clean. Cleaning shall generally be undertaken at times when vehicles used by the Contracting Authority or its staff or representatives, and visitors are not present.
- 1.1.16 The Company shall consult and comply with the Contracting Authority with regard to the entire integrated layout and specification of the office building facilities that the Company intends to provide, based on the requirements stated in this Appendix.
- 1.1.17 The Company shall provide a Consultation Certificate in accordance with the Certification Procedure in respect of this requirement, prior to commencement of any work in connection with these building facilities.
- 1.1.18 The integrated office building (or units) facilities shall be adequately guarded at all times to ensure no unlawful or unauthorised entry.
- 1.1.19 The integrated office buildings (or units) facilities shall fulfil the following construction requirements and operational conditions as a minimum requirement:
- a) The office buildings shall be erected on pre-prepared under-building of brick or concrete dwarf walls founded on concrete strip-footings with damp-proof course.
  - b) The underside of the external walls and floors of the office-building shall not be less than 400 millimetres above surrounding ground level.
  - c) Floors of the office shall be of tongue and groove timber, lined with hardboard or plywood and covered with vinyl floor covering\* (\*Wall to wall carpet overlay shall be provided in particular rooms occupied by the Contracting Authority and Contracting Authority's Representatives as indicated in the list below. The carpet overlay shall be a tufted loop high wear material suitable for an office environment. It shall be treated to prevent stains and water ingress and shall have a wear life of over 10 years).
  - d) The buildings shall comply with part L2 of the Building Regulations
  - e) External walls shall provide a minimum u-value of 0.35 watts per square metre per kelvin. Internal walls shall be smooth with coloured sustainable paint finish.
  - f) Headroom shall be not less than 2.25 metres.
  - g) Ceilings shall be plasterboard and finished with two coats of white sustainable paint. They will provide a minimum u-value of 0.35 watts per square metre per kelvin.
  - h) The office buildings shall be completely weatherproof and watertight. Windows shall comprise double-glazed sealed units or equivalent with window-area being

## Part 4: Specification

**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

not less than 2 square metres for every 10 square metres of floor area and with each window having opening facility for at least one-third of the window size.

- i) All windows shall be fitted with external security roller-shutters operated internally for purpose of security and Venetian-type blinds shall be fitted internally.
- j) All pipe-work shall be suitably lagged and/or insulated to prevent freezing.
- k) All internal doors to rooms shall be fitted with mortice-locks and one set of keys per occupant plus one spare set for rooms occupied by the Contracting Authority and Contracting Authority' Representatives shall be handed over to the Contracting Authority.
- l) The Company shall record the distribution of all room-keys and control additional issue of room-keys.
- m) The external doors shall be fitted with draught excluders and mortise locks, whilst the doors to the entrance and reception area shall be fitted with an electronic opening and closing / locking device operated by means of electronic smart-card.
- n) The Company shall provide smart-cards for use by individuals in the Contracting Authority' staff and shall record the distribution of all smart-cards.
- o) The offices shall be provided with 13 amp socket outlets suitably spaced and provided around the office on the basis of 2 dual gang socket for each 5 square metres of office space.
- p) The offices shall be adequately provided with heating and lighting in accordance with Section 9 below.
- q) Within the integrated office building facilities, the Company shall provide individual office space / rooms for the sole use of the Contracting Authority's staff excepting in cases where staff and /or representatives of the Contracting Authority and the Company are carrying out comparable duties in which case such office space and rooms shall be occupied by the Contracting Authority and the Company.
- r) The office building facilities including both individual office space/rooms and the jointly occupied office space/rooms and facilities provided for use by the Contracting Authority shall include furniture, fixtures and fittings, equipment, stores, protective clothing, and surveying equipment and supplies as listed below, for the Contracting Authority exclusive use and shall be regarded as the minimum requirement.
- s) All furniture, fixtures and fittings, equipment, stores, protective clothing, surveying equipment, computers, computer peripherals software and all supplies for the Contracting Authority's exclusive use shall be new and unused
- t) Complete security, privacy and confidentiality shall be ensured at all times in the rooms and for all facilities including computers and peripherals which are provided for contract administration activities undertaken by the Contracting Authority as described below.
- u) All the telecommunication lines and facilities provided for use by the Contracting Authority as described below, shall be completely independent of the Company's facilities, shall ensure privacy and confidentiality and shall be as a separate account.
- v) The layout and particular room requirements of that part of the office building facility occupied by the Contracting Authority and Contracting Authority's Representatives shall have minimum floor areas as listed in the table below:

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**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

| Room Description                                   | Reference      | Area (square metres) | Particular Requirements                                                                                                                                                                                                                       |
|----------------------------------------------------|----------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Transport Scotland                                 | A              | 30                   | Floor to be fitted with wall to wall carpet                                                                                                                                                                                                   |
| Reception (with waiting area)                      | C              | 30                   | Shared / managed by Company.<br>Seated waiting area with padded seating for 5 people, including two low height tables; water dispenser, brochure display stand and notice board (min 2 metres by 1 metre).<br>Receptionist and security desk. |
| AWPR/B-T Managing Agent                            | E <sub>1</sub> | 20                   | Floor fitted with wall to wall carpet<br>Adjoining Room F/accessed through Room F                                                                                                                                                             |
| Contracting Authority's Representative             | E <sub>2</sub> | 20                   | Floor fitted with wall to wall carpet                                                                                                                                                                                                         |
| Contracting Authority's Site Representative        | E <sub>3</sub> | 20                   | Floor fitted with wall to wall carpet                                                                                                                                                                                                         |
| Contracting Authority's Deputy Site Representative | E <sub>4</sub> | 20                   | Floor fitted with wall to wall carpet                                                                                                                                                                                                         |
| Contracting Authority's Deputy Site Representative | E <sub>5</sub> | 20                   | Floor fitted with wall to wall carpet                                                                                                                                                                                                         |
| Contracting Authority's Deputy Site Representative | E <sub>6</sub> | 20                   | Floor fitted with wall to wall carpet                                                                                                                                                                                                         |
| Contracting Authority's Deputy Site Representative | E <sub>7</sub> | 20                   | Floor fitted with wall to wall carpet                                                                                                                                                                                                         |
| Traffic Police Officer                             | E <sub>8</sub> | 20                   | Floor fitted with wall to wall carpet                                                                                                                                                                                                         |
| Contracting Authority's Secretary / Administration | F              | 24                   | Floor fitted with wall to wall carpet<br>Located near Reception                                                                                                                                                                               |
| Room for photocopier                               | G              | 10                   | Room adjoining Room F but with common access off corridor and not accessed through Room F.                                                                                                                                                    |
| AWPR/B-T Assistant Managing Agent (2 number)       | H <sub>1</sub> | 24                   | Shared                                                                                                                                                                                                                                        |
| Roads Engineer (2 number)                          | H <sub>2</sub> | 24                   | Shared                                                                                                                                                                                                                                        |
| Roads Engineer (2 number)                          | H <sub>3</sub> | 24                   | Shared                                                                                                                                                                                                                                        |
| Roads Engineer (2 number)                          | H <sub>4</sub> | 24                   | Shared                                                                                                                                                                                                                                        |
| Structures Engineer (2 number)                     | H <sub>5</sub> | 24                   | Shared                                                                                                                                                                                                                                        |
| Structures Engineer (2 number)                     | H <sub>6</sub> | 24                   | Shared                                                                                                                                                                                                                                        |
| Structures Engineer (2 number)                     | H <sub>7</sub> | 24                   | Shared                                                                                                                                                                                                                                        |

## Part 4: Specification

**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

| <b>Room Description</b>                                 | <b>Reference</b> | <b>Area<br/>(square<br/>metres)</b> | <b>Particular Requirements</b>                                                                                        |
|---------------------------------------------------------|------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Geotechnical Engineer (2 number)                        | H <sub>8</sub>   | 24                                  | Shared                                                                                                                |
| Geotechnical Engineer (2 number)                        | H <sub>9</sub>   | 24                                  | Shared                                                                                                                |
| Geotechnical Engineer (2 number)                        | H <sub>10</sub>  | 24                                  | Shared                                                                                                                |
| Ecological Clerk of Works (2 number)                    | H <sub>11</sub>  | 24                                  | Shared                                                                                                                |
| Ecological Clerk of Works (3 number)                    | H <sub>12</sub>  | 24                                  | Shared                                                                                                                |
| Landscape Advisor (2 number)                            | H <sub>13</sub>  | 24                                  | Shared                                                                                                                |
| Landscape Advisor (3 number)                            | H <sub>14</sub>  | 24                                  | Shared                                                                                                                |
| AWPR/B-T Assistant Managing Agent (4 number)            | M <sub>1</sub>   | 50                                  | Shared open plan                                                                                                      |
| Assistant Engineer (4 number) and Inspectors (2 number) | M <sub>2</sub>   | 50                                  | Shared open plan                                                                                                      |
| Assistant Engineer (4 number) and Inspectors (2 number) | M <sub>3</sub>   | 50                                  | Shared open plan                                                                                                      |
| Assistant Engineer (4 number) and Inspectors (2 number) | M <sub>4</sub>   | 50                                  | Shared open plan                                                                                                      |
| Storage room                                            | N                | 24                                  |                                                                                                                       |
| <b>General Shared Facilities</b>                        |                  |                                     |                                                                                                                       |
| Conference Room                                         | D                | 40                                  | Shared/managed by Company.<br>Located near main entrance and reception<br>Floor to be fitted with wall to wall carpet |
| Kitchen                                                 | O                | 20                                  | Cooking and dish washing facilities shared with Company                                                               |
| Dining Area                                             | P                | 20                                  | Shared with Company                                                                                                   |
| Lobby Area / Boot Room                                  | Q                | 10                                  | Shared with Company                                                                                                   |
| Male Toilet Facilities                                  | R                | 15                                  | Shared with Company<br>Linked with Room S                                                                             |
| Male Shower Closet and changing area                    | S                | 5                                   | Shared with Company Accessed via Room R                                                                               |
| Female Toilet Facilities                                | T                | 10                                  | Shared with Company<br>Linked with Room U                                                                             |
| Female Shower Closet and changing area                  | U                | 5                                   | Shared with Company Accessed via Room T                                                                               |

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**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

- 1.1.20 A regularly serviced (or mains fed) supply of chilled drinking water and dispensing device with an adequate supply of plastic tumblers shall be provided in the Kitchen/Dining Area at each office and the reception area and conference rooms at the principal office and at any satellite office(s).
- 1.1.21 The management and administration system implemented by the Company shall include for effective and advance allocation of the shared conference room facility to meet the requirements of both the Contracting Authority and the Company.
- 1.1.22 The office buildings shall be properly cleaned and serviced at least once per working day, for so long as it is in use, with essential cleaning and servicing being carried out outside normal working hours but not without presence of office security or other authorised personnel. The Company shall provide at appropriate locations within each site office, and arrange for regular emptying of, recycling bins for paper, plastics and metals in accordance with Site Waste Management Plan Regulations 2008.
- 1.1.23 A high quality durable sign board shall be erected in a prominent location on the approach to the principal offices and satellite office(s) by the Company at a position agreed with the Contracting Authority. The Contracting Authority shall provide details of the required sign layout.
- 1.2 Temporary Initial Accommodation
- 1.2.1 If the principal office is not ready at the Effective Date Temporary initial accommodation shall be made available and for a maximum of 4 weeks thereafter unless otherwise agreed with the Contracting Authority.
- 1.2.2 The temporary accommodation shall consist of the following, as a minimum:
- 1.2.3 Appropriate office accommodation with furnishings and fittings for 18 persons including an administrative assistant and shall have at least 12 rooms with a minimum of 6 square metres per person.
- 1.2.4 Male and Female toilets shall be provided over and above the room and space requirements.
- 1.2.5 A telephone system shall be provided with adequate telephone lines and telephones to cater for all personnel at all times.
- 1.2.6 Broadband shall be provided to allow unrestricted internet access for the Contracting Authority and appropriate internet cables and ancillary equipment shall be provided to cater for all personnel.
- 1.2.7 Computer equipment, comprising laptops and PCs (number of each to be specified by the Contracting Authority following the Effective Date) in accordance with Sections 4.2 and 4.3 of this Appendix 1/1;
- 1.2.8 Colour printer as per Section 4.6.2 of this Appendix 1/1
- 1.2.9 The Company shall provide 18 mobile telephones for the use of the Contracting Authority's staff, in accordance with Appendix 1/3 of this Specification.
- 1.2.10 Car parking for 12 cars shall be provided on granular sub-base material Type 1 to Clause 803 of the Specification of suitable thickness.
- 1.3 Office Accommodation for Period 2 of the Works.
- 1.3.1 A reduced office requirement shall be provided for use by the Contracting Authority for Period 2 over the duration stated in Section 12 of this Appendix while maintaining equal standard of provision and service as for Period 1.
- 1.3.2 The office layout or area of office accommodation that is to remain occupied shall be as agreed by the Contracting Authority such as to fulfil the requirements of the Contracting

## Part 4: Specification

**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

Authority and Contracting Authority's Representatives for Period 2. The area of office accommodation in the table herewith below is indicative of such requirements which are the minimum.

| Room Description                     | Reference | Area (square metres) |
|--------------------------------------|-----------|----------------------|
| Managing Agent/Contracting Authority | A         | 20                   |
| Office                               | E         | 20                   |
| Office                               | F         | 16                   |
| Room for photocopier                 | G         | 10                   |
| Office                               | H typical | 12                   |
| Storage room                         | N         | 12                   |
| Kitchen facilities                   | O         | Shared with Company  |
| Male Toilets                         | R         | Shared with Company  |
| Female Toilet                        | T         | Shared with Company  |

#### 1.4 Accommodation Requirements Relating to Monitoring the Assembly and Testing etc. of Traffic Scotland Equipment

1.4.1 The Company shall provide accommodation for the Contracting Authority at the Company's Traffic Scotland Equipment Assembly Point during the periods that any Works are being undertaken at the Assembly Point associated with the assembly, testing and certification of the Traffic Scotland Equipment.

1.4.2 The accommodation may be shared with the Company's accommodation and shall comprise an office with two desks, two chairs and appropriate lighting, heating and electrical sockets. The Company shall provide welfare facilities which shall be shared for use by the Contracting Authority's staff and the Company's staff.

## 2 Furnishings and Fitments

### 2.1 Entrances, Reception and Hallways

| Quantity                        | Item                                                                                                                                                                             |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | Principal Entrance, Reception and Hallway. Furnishings as described in Room Reference C in the table attached to 1.20.9 above. Mats to be provided at all entrances.             |
| 1                               | Concrete entranceway with boot scraper and washing facilities                                                                                                                    |
| As per Regs                     | Number fire extinguishers, wall mounted to be regularly serviced                                                                                                                 |
| As required for area to be lit. | Adequate 500 watt sun flood lamps to light hard standings including any emergency exits, with internal switch and external passive infra-red detector and time switch operation. |
| 1                               | Maximum and minimum thermometer                                                                                                                                                  |
| 1                               | Notice board 2 metres x 1 metre (minimum dimensions)                                                                                                                             |

## Part 4: Specification

**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority****2.2 Principal Office****2.2.1 Room A: Managing Agent / Contracting Authority**

| Quantity | Item                                                                                                                                                                                                                                                                                                                                                           |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2        | Independent telephone and ISDN line                                                                                                                                                                                                                                                                                                                            |
| 2        | Telephone extension connected to switchboard and connection to Company                                                                                                                                                                                                                                                                                         |
| 1        | Conference call speaker phone connected to telephone system                                                                                                                                                                                                                                                                                                    |
| 2        | 1.8 metres by 1.6 metres ergonomic L-shaped desk with two pedestals with locking drawers and side unit with veneered surface.                                                                                                                                                                                                                                  |
| 2        | 5 point swivel wheeled desk armchair fully adjustable                                                                                                                                                                                                                                                                                                          |
| 1        | Meeting table; 2 metres long by 1 metre wide or similar with veneered surface with 6 padded chairs                                                                                                                                                                                                                                                             |
| 2        | Lockable 4 drawer, steel filing cabinet, each drawer complete with file hangers 1.3 metres high by 1 metre wide.                                                                                                                                                                                                                                               |
| 1        | Lockable steel cupboard with 3 adjustable height shelves, 1.8 metres high by 1.2 metres wide                                                                                                                                                                                                                                                                   |
| 4        | Coat hooks – wall mounted                                                                                                                                                                                                                                                                                                                                      |
| 2        | Wastepaper bin                                                                                                                                                                                                                                                                                                                                                 |
| 2        | Paper punch and stapler                                                                                                                                                                                                                                                                                                                                        |
| 2        | Set of 3 tier filing trays                                                                                                                                                                                                                                                                                                                                     |
| 2        | 1.5 metres by 1 metre white marker board with appropriate non-permanent dry markers and whiteboard eraser. White marker board to be attached to wall as directed by the Contracting Authority.                                                                                                                                                                 |
| 1        | Framed cork or fibreboard panelling wall board mounted 1.5 metres by one metre                                                                                                                                                                                                                                                                                 |
| 2        | CAT 6 (RJ45) surface mounted boxes – connected to LAN. Note – one terminal is to allow direct connection of Contracting Authority's own computer equipment to the broadband system to allow connection via VPN to Contracting Authority's office IT systems. An additional terminal will be required if the Company provides a network-based telephone system. |
| 1        | Video Conference Facility including 42" Flat Screen TV(Full 1080p HD)                                                                                                                                                                                                                                                                                          |
| 1        | Laptop as per Section 4.2 below - with Port Replicator and A colour                                                                                                                                                                                                                                                                                            |

## Part 4: Specification

**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

|   |                                                                     |
|---|---------------------------------------------------------------------|
|   | laser printer                                                       |
| 2 | Desk lamp.                                                          |
| 1 | Name plate on door (names as advised by the Contracting Authority). |
| 2 | Desk fan                                                            |

**2.2.2 Room D: Conference Room**

| <b>Quantity</b> | <b>Item</b>                                                                                                                                                                                         |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1               | Table with veneered surface of sufficient size to accommodate 20 persons comfortably; table to be formed from multiple units to allow to be collapsed to clear the floor for theatre style seating. |
| 20              | Conference chairs                                                                                                                                                                                   |
| 1               | 1m deep framed cork or fibre board mounted on length of one wall at appropriate height                                                                                                              |
| 1               | White Marker Board 1 metre x 1.5 metres (with supply markers) mounted on wall at appropriate position.                                                                                              |
| 4               | CAT 6 (RJ45) surface mounted boxes – connected to LAN. An additional terminal will be required if the Company provides a network-based telephone system.                                            |
| 1               | Ceiling Mounted Overhead Projector and Projector Screen                                                                                                                                             |
| 1               | Telephone extensions connected to switchboard                                                                                                                                                       |
| 1               | Conference call speaker phone connected to telephone system                                                                                                                                         |
| 2               | Wastepaper baskets                                                                                                                                                                                  |
| 20              | Coat hooks – wall mounted                                                                                                                                                                           |
| 1               | Window mounted powered extractor fan                                                                                                                                                                |
| 1               | Free standing fan                                                                                                                                                                                   |
| 1               | Flip chart stand and replacement paper pads.                                                                                                                                                        |
| 1               | Wall or overhead mounted retractable screen with overhead mounted dedicated electronic projector and wall mounted connection for a laptop.                                                          |
| 2               | 1.8 metres by 1 metre side table / unit (for tea / coffee)                                                                                                                                          |
| 1               | Cupboard for conference room crockery. Can be incorporated under the side table.                                                                                                                    |
| 1               | Crockery to cater for 20 persons - set of tea / coffee cups, saucers, side plates and tea spoons.                                                                                                   |



## Part 4: Specification

**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

| Quantity | Item                                                                 |
|----------|----------------------------------------------------------------------|
| 2        | Milk jugs and sugar bowls, with milk and sugar provided as necessary |
| 1        | Chilled water dispenser with supply of plastic tumblers.             |
| 1        | Wall mounted clock                                                   |
| 1        | Name plate on door (name as advised by Contracting Authority).       |

The Company shall provide and store separately an additional 20 stackable padded chairs for use during any presentations in a 'theatre-style' seating arrangement. The Company shall provide adequate storage for the chairs when not in use.

**2.2.3 ROOM E<sub>1</sub>: (Contracting Authority's Representative)**

| Quantity | Item                                                                                                                                                                                           |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1        | Telephone extension connected to switchboard and connection to Company                                                                                                                         |
| 1        | 1.8 metres by 1.6 metres ergonomic L-shaped desk with two pedestals with locking drawers and side unit with veneered surface.                                                                  |
| 1        | 5 point swivel wheeled desk armchair fully adjustable                                                                                                                                          |
| 1        | Meeting table; 2 metres long by 1 metre wide or similar with veneered surface with 6 padded chairs                                                                                             |
| 1        | Plan chest A0 size with 6 drawers or vertical plan-file                                                                                                                                        |
| 1        | Lockable steel cupboard with 3 adjustable height shelves, 1.3 metres high by 1 metre wide                                                                                                      |
| 2        | Lockable 4 drawer fire resistant steel filing cabinet, each drawer complete with hangers as required, 1.3 metres high by 1 metre wide                                                          |
| 1        | Framed cork or fibreboard panelling wall board mounted 3.0 metres by 1 metre                                                                                                                   |
| 1        | 1.5 metres by 1 metre white marker board with appropriate non-permanent dry markers and whiteboard eraser. White marker board to be attached to wall as directed by the Contracting Authority. |
| 1        | Glass fronted bookcase 1.5 metres wide by 1 metre high                                                                                                                                         |
| 6        | Coat hooks – wall mounted                                                                                                                                                                      |
| 1        | Wastepaper bin                                                                                                                                                                                 |
| 1        | Paper punch and stapler                                                                                                                                                                        |
| 2        | Set 3 tier filing trays                                                                                                                                                                        |

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**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

| Quantity | Item                                                                                                                                                                                                                                                                                                                                                                                  |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1        | 3 metres of 225 millimetres by 25 millimetres shelving                                                                                                                                                                                                                                                                                                                                |
| 2        | CAT 6 (RJ45) surface mounted boxes – connected to LAN. Note – one terminal is to allow direct connection of Scottish Ministers' own computer equipment to the broadband system to allow connection via VPN to Contracting Authority' / Consultants' organisation office IT systems. An additional terminal will be required if the Company provides a network-based telephone system. |
| 1        | Laptop as per Section 4.2 below - with Port Replicator and A3 colour laser printer.                                                                                                                                                                                                                                                                                                   |
| 1        | Desk lamp                                                                                                                                                                                                                                                                                                                                                                             |
| 1        | Desk fan                                                                                                                                                                                                                                                                                                                                                                              |
| 1        | Name plate on door (name as advised by the Contracting Authority).                                                                                                                                                                                                                                                                                                                    |

2.2.4 **ROOMS E<sub>2</sub>, E<sub>3</sub>, E<sub>4</sub>, E<sub>5</sub>, E<sub>6</sub>, E<sub>7</sub> and E<sub>8</sub>****QUANTITIES LISTED PER ROOM**

| Quantity | Item                                                                                                                                                                                           |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1        | Telephone extension connected to switchboard and connection to Company                                                                                                                         |
| 1        | 1.8 metres by 1.6 metres ergonomic L-shaped desk with two pedestals with locking drawers and side unit with veneered surface.                                                                  |
| 1        | 5 point swivel wheeled desk armchair fully adjustable                                                                                                                                          |
| 1        | Meeting table; 2 metres long by 1 metre wide or similar with veneered surface with 6 padded chairs                                                                                             |
| 1        | Plan chest A0 size with 6 drawers or vertical plan-file                                                                                                                                        |
| 1        | Lockable steel cupboard with 3 adjustable height shelves, 1.8 metres high by 1.2 metres wide                                                                                                   |
| 2        | Lockable 4 drawer fire resistant steel filing cabinet, each drawer complete with hangers as required, 1.3 metres high by 1 metre wide                                                          |
| 1        | Framed cork or fibreboard panelling wall board mounted 3.0 metres by 1 metre                                                                                                                   |
| 1        | 1.5 metres by 1 metre white marker board with appropriate non-permanent dry markers and whiteboard eraser. White marker board to be attached to wall as directed by the Contracting Authority. |
| 1        | Glass fronted bookcase 1.5 metres wide by 1 metre high                                                                                                                                         |

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**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

| Quantity | Item                                                                                                                                                                                                                                                                                                                                                                                       |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6        | Coat hooks – wall mounted                                                                                                                                                                                                                                                                                                                                                                  |
| 1        | Wastepaper bin                                                                                                                                                                                                                                                                                                                                                                             |
| 1        | Paper punch and stapler                                                                                                                                                                                                                                                                                                                                                                    |
| 2        | Set 3 tier filing trays                                                                                                                                                                                                                                                                                                                                                                    |
| 1        | 3 metres of 225 millimetres by 25 millimetres shelving                                                                                                                                                                                                                                                                                                                                     |
| 2        | CAT 6 (RJ45) surface mounted boxes – connected to LAN. Note – one terminal is to allow direct connection of Contracting Authority's own computer equipment to the broadband system to allow connection via VPN to Contracting Authority's / Consultants' organisation office IT systems. An additional terminal will be required if the Company provides a network-based telephone system. |
| 1        | Laptop as per Section 4.2 below - with Port Replicator                                                                                                                                                                                                                                                                                                                                     |
| 1        | Desk lamp                                                                                                                                                                                                                                                                                                                                                                                  |
| 1        | Desk fan                                                                                                                                                                                                                                                                                                                                                                                   |
| 1        | Name plate on door (name as advised by the Contracting Authority).                                                                                                                                                                                                                                                                                                                         |

**2.2.5 ROOM F (Secretary / Administration)**

| Quantity | Item                                                                                                                                  |
|----------|---------------------------------------------------------------------------------------------------------------------------------------|
| 2        | 1.8 metres by 1.6 metres ergonomic L-shaped desk with two pedestals with locking drawers and side unit with veneered surface.         |
| 2        | 5 point swivel wheeled armchair fully adjustable                                                                                      |
| 1        | Work -table 2 metres x 1 metre wide with veneered surface                                                                             |
| 4        | Office chairs                                                                                                                         |
| 2        | Lockable steel cupboard with 3 adjustable height shelves, 1.8 metres high by 1.2 metres wide                                          |
| 8        | Lockable 4 drawer fire resistant steel filing cabinet, each drawer complete with hangers as required, 1.3 metres high by 1 metre wide |
| 1        | Framed cork or fibreboard panelling wall board mounted 3 metres x 1 metre                                                             |
| 6        | Coat hooks – wall mounted                                                                                                             |
| 2        | Wastepaper bin                                                                                                                        |
| 2        | Paper punch and stapler                                                                                                               |

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**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

| Quantity | Item                                                                                                                                                                                                                                                                                                                                                                                       |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4        | Set of 3 tier filing tray                                                                                                                                                                                                                                                                                                                                                                  |
| 2        | CAT 6 (RJ45) surface mounted boxes – connected to LAN. Note – one terminal is to allow direct connection of Contracting Authority's own computer equipment to the broadband system to allow connection via VPN to Contracting Authority's / Consultants' organisation office IT systems. An additional terminal will be required if the Company provides a network-based telephone system. |
| 2        | PC as per Section 4.3 below                                                                                                                                                                                                                                                                                                                                                                |
| 1        | Laser printer A3 colour as per section 4.6.2 below                                                                                                                                                                                                                                                                                                                                         |
| 1        | Scanner with a minimum resolution of 2400 x 2400 dpi (non-interpolated)                                                                                                                                                                                                                                                                                                                    |
| 1        | Document shredder - business type cross-cut fully mounted with disposal container, 60 litre bin capacity (to be maintained as required).                                                                                                                                                                                                                                                   |
| 1        | Caller-connect telephone terminal with two outside lines and capable of handling up to 12 extensions, plus a connection to the Company's main office. All telephones shall have caller connect and announcement facility                                                                                                                                                                   |
| 1        | Plain paper fax machine, complying with CCITT Group 2,3,4. The equipment shall have full BAPT approval for direct connection to the public telephone system                                                                                                                                                                                                                                |
| 1        | Outside phone line with direct connection to exchange (PSTN) for use with the fax machine only                                                                                                                                                                                                                                                                                             |

| Quantity  | Item                                                                                                                                                                                                                      |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Supply of | A4 and A3 copying paper as required for photocopier and word processing for duration of Period. Copying material, toner/ink, cartridges and paper shall be replenished as required for document copies, fax and printers. |
| 1         | 6 metres of 225 millimetre x 25 millimetre shelving                                                                                                                                                                       |
| 2         | First Aid kit                                                                                                                                                                                                             |
| 1         | Desk fan                                                                                                                                                                                                                  |
| 1         | Name plate on door (name as advised by the Contracting Authority).                                                                                                                                                        |

2.2.6 **ROOM G**

| Quantity | Item                                                           |
|----------|----------------------------------------------------------------|
| 1        | Photocopier / multi-function device as per Section 4.6.2 below |

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**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

|   |                                                                                 |
|---|---------------------------------------------------------------------------------|
| 1 | Plotter as per Section 4.6.2 below                                              |
| 2 | Lockable steel cupboard with 6 adjustable height shelves, 2.2 metres by 1 metre |
| 1 | Work table 2 metres by 1 metre with veneered surface                            |
| 2 | CAT 6 (RJ45) surface mounted boxes – connected to LAN.                          |
| 1 | Name plate on door (name as advised by the Contracting Authority).              |

2.2.7 **ROOM H<sub>1</sub>, H<sub>2</sub>, H<sub>3</sub>, H<sub>4</sub>, H<sub>5</sub>, H<sub>6</sub>, H<sub>7</sub>, H<sub>8</sub>, H<sub>9</sub>, H<sub>10</sub>, H<sub>11</sub>, H<sub>12</sub>, H<sub>13</sub> and H<sub>14</sub>****QUANTITIES LISTED PER ROOM**

| Quantity | Item                                                                                                                                  |
|----------|---------------------------------------------------------------------------------------------------------------------------------------|
| 2        | Telephone extension connected to switchboard                                                                                          |
| 2        | 1.8 metres by 1 metre double pedestal desk with locking drawers and side unit with veneered surface                                   |
| 2        | 5 point swivel wheeled armchair fully adjustable                                                                                      |
| 1        | Table / bench 3 metres by 1 metre 1 metre above floor level                                                                           |
| 1        | Plan chest A0 size with 6 drawers or vertical plan-file                                                                               |
| 2        | Lockable steel cupboard with 3 adjustable height shelves, 1.8 metres high by 1.2 metres wide                                          |
| 2        | Lockable 4 drawer fire resistant steel filing cabinet, each drawer complete with hangers as required, 1.3 metres high by 1 metre wide |
| 1        | Framed cork or fibreboard panelling mounted on wall 3 metres x 1 metre, 1 metre above floor                                           |
| 2        | Glass fronted bookcase 1.5 metres wide by 1 metre high                                                                                |
| 1        | Set of four coat hooks – wall mounted                                                                                                 |
| 2        | Wastepaper bins                                                                                                                       |
| 2 sets   | 6 metres of 225 millimetres by 25 millimetres shelving                                                                                |

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**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

| Quantity | Item                                                                                                                                                                                                                                                                                                                                                                                     |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4        | CAT 6 (RJ45) surface mounted boxes – connected to LAN. Note – one terminal is to allow direct connection of Contracting Authority' own computer equipment to the broadband system to allow connection via VPN to Contracting Authority' / Consultants' organisation office IT systems. An additional terminal will be required if the Company provides a network-based telephone system. |
| 2        | PC as per Section 4.3 below                                                                                                                                                                                                                                                                                                                                                              |
| 2        | Paper punch and stapler                                                                                                                                                                                                                                                                                                                                                                  |
| 1        | Desktop pencil sharpener                                                                                                                                                                                                                                                                                                                                                                 |
| 2        | Desk fan                                                                                                                                                                                                                                                                                                                                                                                 |
| 2        | Set of 3 tier filing tray                                                                                                                                                                                                                                                                                                                                                                |
| 1        | Name plate on door (names as advised by the Contracting Authority).                                                                                                                                                                                                                                                                                                                      |

The Contracting Authority may arrange desks opposite each other. The Company shall provide sufficient desk mounted screens to be provided on desks which are facing each other, approximately 0.4 metres high, and shall fix these to the desks, as requested by the Contracting Authority.

2.2.8 **ROOM M<sub>1</sub>, M<sub>2</sub>, M<sub>3</sub> and M<sub>4</sub>****QUANTITIES LISTED PER ROOM**

| Quantity | Item                                                                                                                                  |
|----------|---------------------------------------------------------------------------------------------------------------------------------------|
| 8        | Telephone extension connected to switchboard                                                                                          |
| 8        | 1.8 metres by 1 metre double pedestal desk with locking drawers and side unit with veneered surface                                   |
| 8        | 5 point swivel wheeled armchair fully adjustable                                                                                      |
| 2        | Table / bench 3 metres by 1 metre 1 metre above floor level                                                                           |
| 3        | Plan chest A0 size with 6 drawers or vertical plan-file                                                                               |
| 4        | Padded office arm chairs                                                                                                              |
| 2        | Lockable steel cupboard with 3 adjustable height shelves, 1.8 metres high by 1.2 metres wide                                          |
| 6        | Lockable 4 drawer fire resistant steel filing cabinet, each drawer complete with hangers as required, 1.3 metres high by 1 metre wide |
| 2        | Vertical Plan file (open hangers)                                                                                                     |
| 2        | Framed cork or fibreboard panelling mounted on wall 3 metres x 1 metre, 1 metre above floor                                           |

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**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

| Quantity | Item                                                                                                                                                                                                                                                                                                                                                                                     |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2        | Glass fronted bookcase 1.5 metres wide by 1 metre high                                                                                                                                                                                                                                                                                                                                   |
| 4        | Sets of four coat hooks – wall mounted                                                                                                                                                                                                                                                                                                                                                   |
| 4        | Wastepaper bins                                                                                                                                                                                                                                                                                                                                                                          |
| 4 sets   | 6 metres of 225 millimetres by 25 millimetres shelving                                                                                                                                                                                                                                                                                                                                   |
| 12       | CAT 6 (RJ45) surface mounted boxes – connected to LAN. Note – one terminal is to allow direct connection of Contracting Authority' own computer equipment to the broadband system to allow connection via VPN to Contracting Authority' / Consultants' organisation office IT systems. An additional terminal will be required if the Company provides a network-based telephone system. |
| 2        | Laptop as per Section 4.2 below                                                                                                                                                                                                                                                                                                                                                          |
| 6        | PC as per Section 4.3 below                                                                                                                                                                                                                                                                                                                                                              |
| 6        | Paper punch and stapler                                                                                                                                                                                                                                                                                                                                                                  |
| 2        | Desktop pencil sharpener                                                                                                                                                                                                                                                                                                                                                                 |
| 6        | Desk fan                                                                                                                                                                                                                                                                                                                                                                                 |
| 1        | First Aid kit                                                                                                                                                                                                                                                                                                                                                                            |
| 8        | Set of 3 tier filing tray                                                                                                                                                                                                                                                                                                                                                                |
| 1        | Name plate on door (names as advised by the Contracting Authority).                                                                                                                                                                                                                                                                                                                      |

The Contracting Authority intend to arrange desks in pods of 4 desks adjacent to each other. The Company shall provide sufficient desk mounted screens to be provided on desks which are facing each other, approximately 0.4 metres high, and shall fix these to the desks, as requested by the Contracting Authority.

The Company shall install a photocopier / multi-function device, specification as per Section 4.6.2 below, in one of the rooms of Type M, as requested by the Contracting Authority.

The Company shall install a CAD-PC, specification as per Section 4.4 below, instead of a PC in two of the rooms of Type M, as requested by the Contracting Authority.

**2.2.9 ROOM N Storage Room**

| Quantity | Item                                   |
|----------|----------------------------------------|
| 1        | 10 metres shelving                     |
| 2        | Sets of four coat hooks – wall mounted |
| 1        | Storage racks for survey equipment     |

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**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

|   |                                                                                          |
|---|------------------------------------------------------------------------------------------|
| 3 | Lockable steel cabinet 1 metres wide by 2.0 metres high with 6 adjustable height shelves |
| 1 | Name plate on door (name as advised by the Contracting Authority).                       |

2.2.10 **ROOMS O and P Kitchen and Dining Area**

| Quantity | Item                                                                                                                                                     |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1        | 4 plate electric cooker with grill and oven                                                                                                              |
| 1        | Stainless steel sink with draining board, complete with under cupboards and Formica worktop, hot and cold water supply, drainage rack and utensil holder |
| 1        | 'King size' waste bin complete with supply of liners (replenished as                                                                                     |
| 1        | Wall mounted cupboard minimum of 4 metres long to suit number of staff including the Company's staff.                                                    |
| 1        | Base unit minimum of 4 metres long with drawers and cupboards complete with Formica worktop                                                              |
| 1        | Wall mounted clock                                                                                                                                       |
| 2        | 3 pint electric kettle with automatic switch-off                                                                                                         |
| 1        | 3 pint teapot                                                                                                                                            |
| 1        | 3 pint coffee pot                                                                                                                                        |
| 2        | Toaster                                                                                                                                                  |
| 1        | Minimum 6 cubic feet refrigerator to suit number of staff including the Company's staff.                                                                 |
| 1        | 800 watt large microwave with turntable                                                                                                                  |
| 1        | Chilled water dispenser with supply of plastic tumblers.                                                                                                 |
| 1        | Fire extinguisher (dry powder)                                                                                                                           |
| 1        | Fire blanket                                                                                                                                             |
| 1        | Window or external wall mounted powered extractor fan                                                                                                    |
| 1        | First aid kit complying with relevant regulations.                                                                                                       |
| 4 sets   | Crockery, cutlery and cooking utensils for 6 persons or as required by the Contracting Authority (to be replaced as required)                            |
| -        | Supply of tea, coffee, milk and sugar (replenished as required)                                                                                          |
| -        | Supply of tea towels (replenished and laundered during periods)                                                                                          |
| -        | Dispenser with paper hand towels (replenished as required)                                                                                               |
| -        | Supply of paper kitchen towels, kitchen cloths and scourers                                                                                              |
| -        | Bottle of washing up liquid (replenished as required)                                                                                                    |



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**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

| Quantity   | Item                                                                                           |
|------------|------------------------------------------------------------------------------------------------|
| 2          | Liquid soap dispensers with supply of liquid soap, or supply of soap (replenished as required) |
| Min 2 sets | Table and 6 chairs                                                                             |

**2.2.11 ROOM Q Lobby Area / Boot Room**

| Quantity | Item                                                                                  |
|----------|---------------------------------------------------------------------------------------|
| 2        | Timber bench (or fixed seating) 2 metres long                                         |
| 15       | Personal 1.8 metre high metal lockers minimum area of 450x450                         |
| 1        | Clothes drying rack with tubular heater and 15 number coat hooks                      |
| -        | Supply of large disposable plastic overshoes and dispenser (replenished as necessary) |

**2.2.12 ROOMS R and S Male Toilet Facilities and Shower Unit**

| Quantity * | Item                                                                                                                          |
|------------|-------------------------------------------------------------------------------------------------------------------------------|
| 3          | WC suites with coat hooks                                                                                                     |
| 3          | Toilet roll holders and supply of toilet rolls (replenished when                                                              |
| 3          | Bowl type urinals complete with sustainable flush system                                                                      |
| 3          | Wash-hand basins complete with taps and hot and cold water                                                                    |
| 2          | Towel dispensers with towels (laundered and replenished when                                                                  |
| 2          | Liquid soap dispensers with supply of liquid soap, or supply of soap (replenished when required)                              |
| 1          | Dispensers with selection of barrier creams, sunscreens (high factor) and heavy duty hand cleaner (replenished when required) |
| 1          | Electric wall-mounted hand drier (low energy use)                                                                             |
| 1          | Wall mirror 800x600 millimetres                                                                                               |
| 1          | Set of four coat hooks – wall mounted                                                                                         |
| 1          | Window or external wall mounted powered extractor fan                                                                         |
| 1          | Shower room and changing area (Room S) with electrical socket points in separate compartment with door off main toilet area   |

\* Numbers to be as required by relevant standards / regulations to service number of personnel at office

---

**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**
**2.2.13 ROOMS T and U Female Toilet Facilities**

| <b>Quantity **</b> | <b>Item</b>                                                                                                                   |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------|
| 2                  | WC suites with coat hooks and sanitary bin.                                                                                   |
| 2                  | Toilet roll holders and supply of toilet rolls (replenished when                                                              |
| 2                  | Wash–hand basins complete with taps and hot and cold water                                                                    |
| 1                  | Towel dispensers with towels (laundered and replenished when                                                                  |
| 1                  | Electric wall-mounted hand drier (low energy use)                                                                             |
| 1                  | Dispensers with selection of barrier creams, sunscreens (high factor) and heavy duty hand cleaner (replenished when required) |
| 2                  | Liquid soap dispensers with supply of liquid soap, or supply of soap (replenished when required)                              |
| 2                  | Wall mirrors 800x600 millimetres                                                                                              |
| 1                  | Set of four coat hooks – wall mounted                                                                                         |
| 1                  | Window or external wall mounted powered extractor fan                                                                         |
| 1                  | Shower room and changing area (Room U) with electrical socket points in separate compartment with door off main toilet area   |

\*\* Numbers to be as required by relevant standards / regulations to service number of personnel at office

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**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority****3 Weather Recording Apparatus**

- 3.1 The Company shall set up and maintain, at a minimum of 4 positions to be determined by the Contracting Authority, apparatus comprising: maximum/minimum thermometer in a standard shelter and a rain gauge for daily reading. The Company shall supply and maintain a portable anemometer provided with tripod and recording device. The Company shall record daily readings on the rain gauge and anemometer in a format to be agreed with the Contracting Authority and shall provide the readings to the Contracting Authority on a weekly basis, or as when requested by the Contracting Authority.

**4 Computer Equipment****4.1 General Requirements**

- 4.1.1 All the equipment listed below shall be provided new when the principal offices are provided and shall be installed in the respective rooms described above in the preceding Section 2. The computer equipment specified in Section 1.21 above for use in the temporary accommodation forms part of the overall computer equipment requirements defined in Section 2 and shall be relocated to the principal offices by the Company and installed, as requested by the Contracting Authority.
- 4.1.2 All the equipment listed below shall be maintained by the Company up to the issue of the Final Completion Certificate plus 12 months unless otherwise stated. The equipment shall be installed and commissioned by a reputable quality assured supplier (BS EN ISO 9001). The equipment shall be covered by a hardware maintenance contract with an eight hour maximum response time for repair or replacement.
- 4.1.3 The Company shall maintain and replace computer equipment as necessary. The Company shall provide software support for all equipment until the end of Period 2 unless otherwise stated.
- 4.1.4 The equipment in this Section is indicative of the specification and standard of equipment required by the Contracting Authority. The Contracting Authority considers the equipment in this Section to be mid-range equipment in March 2013. The Company shall provide computer equipment which is acceptable to the Contracting Authority as being appropriate mid-range equipment at the Effective Date.
- 4.1.5 The Company shall update computer operating systems and software when updated by the vendor.
- 4.1.6 Notwithstanding the requirement of Section 4.14 above, the Company shall upgrade the operating systems and software on the computer equipment to the most up to date versions three years after the Effective Date.
- 4.1.7 Any equipment that is replaced during the period of use by the Contracting Authority shall be replaced with equipment which is acceptable to the Contracting Authority as being appropriate mid-range equipment at the time.

**4.2 Laptop/notebook computers**

- 4.2.1 Laptop / notebook computers shall be retained by the allocated users for the duration of the New Works plus 5 years
- 4.2.2 Laptop / notebook computers shall not be configured in such a manner as to restrict or permit use only on site when connected to the network. Laptops shall be configured to permit use outside of the offices.
- 4.2.3 The equipment shall all be installed in the respective rooms described above in the preceding Section 2 according to the details specified below; these are regarded as

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**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

typical and alternative suppliers may be considered; the details of the entire package of computers and peripherals shall however be agreed with the Contracting Authority:

|                                                          |                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dell Latitude E6430 or similar approved mid-range laptop | 3rd Gen Intel® Core™ i5-3320M (2.60GHz, 3MB cache, Dual Core) (Minimum)                                                                                                                                                                                                                                                                                       |
|                                                          | 4GB (1x4GB) 1600MHz DDR3 Memory (Minimum)                                                                                                                                                                                                                                                                                                                     |
|                                                          | 14.1 inch Wide Screen WXGA                                                                                                                                                                                                                                                                                                                                    |
|                                                          | 500GB (7.200 Rpm) Serial ATA Hard Drive (Minimum)                                                                                                                                                                                                                                                                                                             |
|                                                          | Optical Drive CD/DVD-RW                                                                                                                                                                                                                                                                                                                                       |
|                                                          | nVIDIA Quadro NVS Graphics Card (minimum)                                                                                                                                                                                                                                                                                                                     |
|                                                          | Integrated Wireless Intel PRO/Wireless Network 802.1n                                                                                                                                                                                                                                                                                                         |
|                                                          | Microsoft® Windows® 7 Professional 64 bit                                                                                                                                                                                                                                                                                                                     |
|                                                          | Separate 19 inch flat screen monitor for connecting within office                                                                                                                                                                                                                                                                                             |
|                                                          | Optical wheel mouse                                                                                                                                                                                                                                                                                                                                           |
|                                                          | Port Replicator and cabling for mounting in office. Port replicator to be lockable (with 2 keys provided) to allow secure fixing of computer if left in office outside of working hours. Security cable to be provided to connect between locking-point on port replicator and appropriate fixing at the other end mounted securely to the frame of the desk. |
|                                                          | Separate full size keyboard                                                                                                                                                                                                                                                                                                                                   |
|                                                          | Spare power pack and cables                                                                                                                                                                                                                                                                                                                                   |
|                                                          | Car charging lead                                                                                                                                                                                                                                                                                                                                             |
|                                                          | Carrying case - Backpack                                                                                                                                                                                                                                                                                                                                      |
| Maximum Weight 2.2kg                                     |                                                                                                                                                                                                                                                                                                                                                               |
| Extended battery                                         |                                                                                                                                                                                                                                                                                                                                                               |

4.3 Desktop Personal Computers (PC's)

4.3.1 Personal Computers shall be installed in the respective rooms described above in the preceding Section 2 according to the details specified below; these are regarded as typical and alternative suppliers may be considered; the details of the entire package of computers and peripherals shall however be agreed with the Contracting Authority:

|                                                     |                                                                                   |
|-----------------------------------------------------|-----------------------------------------------------------------------------------|
| Dell OptiPlex 7010 or similar approved mid-range PC | 3rd Gen Intel® Core™ i5-3570S Processor (Quad Core, 3.10GHz Turbo, 6MB) (Minimum) |
|                                                     | 8GB (2X4GB) 1600 MHz DDR3 Non-ECC (Minimum)                                       |
|                                                     | 500GB 2.5inch Serial ATA II (7.200 Rpm) Hard Drive (Minimum)                      |
|                                                     | Optical Drive 16X DVD+/-RW Drive (DVD+RW)                                         |
|                                                     | nVidia Quadro FX Graphics Card (minimum)                                          |
|                                                     | Onboard Sound Card                                                                |
|                                                     | Ethernet Intel PRO/1000 Gigabit                                                   |
|                                                     | Full Size Keyboard                                                                |
|                                                     | Optical Wheel Mouse                                                               |
|                                                     | Tower case                                                                        |
|                                                     | Microsoft® Windows® 7 Professional 64 bit                                         |

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**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

|  |                             |
|--|-----------------------------|
|  | 19 inch flat screen monitor |
|--|-----------------------------|

4.4 Desktop CAD Personal Computers (CAD-PCs)

4.4.1 CAD Personal Computers shall be installed in the respective rooms described above in the preceding Section 2 according to the details specified below; these are regarded as typical and alternative suppliers may be considered; the details of the entire package of computers and peripherals shall however be agreed with the Contracting Authority:

|                                                         |                                                                                     |
|---------------------------------------------------------|-------------------------------------------------------------------------------------|
| Dell Precision T5600 or similar approved performance PC | Intel® Xeon® Processor E5-2643 (Quad Core, 3.30GHz Turbo, 10MB, 8.0 GT/s) (Minimum) |
|                                                         | 16GB (4x4GB) 1600MHz DDR3 ECC RDIMM (Minimum)                                       |
|                                                         | 600GB 2.5inch SAS (10.000 Rpm) Hard Drive (Minimum)                                 |
|                                                         | Optical Drive 16X DVD+/-RW Drive                                                    |
|                                                         | 2 GB NVIDIA Quadro 4000 (2DP & 1DVI-I) (1DP-DVI & 1DVI-VGA adapter) (Minimum)       |
|                                                         | Onboard Sound Card                                                                  |
|                                                         | Ethernet Intel PRO/1000 Gigabit                                                     |
|                                                         | Full Size Keyboard                                                                  |
|                                                         | Optical Wheel Mouse                                                                 |
|                                                         | Tower case                                                                          |
|                                                         | Microsoft® Windows® 7 Professional 64 bit                                           |
| Two 19 inch flat screen monitors                        |                                                                                     |

4.5 Network (LAN)

4.5.1 The Company shall provide the following:

- a) An Asynchronous Digital Subscriber Line (ASDL) or ISDN line for six concurrent users
- b) All routers, hubs, cabling and connections required to connect six concurrent users to the ADSL/ISDN line and also to the network server.
- c) One desktop pc is required to have two hard drives to double as a network server. The server shall have a degree of hardware redundancy built in by utilising hard drive mirroring or similar.
- d) The network shall be installed by the Company to facilitate free access to internet and enable inter-office communication via email.
- e) The Company shall provide a web based collaboration and document management system which shall be capable of handling the data requirements of the Company and the Contracting Authority, with respect to drawings and documentation generated by both parties during the New Works.
- f) The Company shall provide free wi-fi access to the internet within the Office Accommodation for Period 1 and Period 2, and within the Temporary Initial Office Accommodation.

4.6 Ancillary Equipment

4.6.1 Computer Software - All of which shall be the most up to date version available at the Date of Award of Contract.

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- 4.6.2 The following software shall be installed on each computer, but not be limited to, while each full set of the disks and documentation shall be supplied for each set of software installed to the Contracting Authority.
- a) Full installation of Microsoft Office Professional 2013 onwards;
  - b) PC Security packages (Antivirus, firewall, Anti-Spyware etc.) with daily updates or as updated by the vendor (Symantec Endpoint Protection or similar);
  - c) CD / DVD authoring / writing software on all computers;
  - d) Adobe Reader 10 (on all computers except those with Adobe Acrobat 10 Pro);
  - e) CutePDF Writer or similar to allow creation of PDFs with no watermark or software labelling (on all computers except those with Adobe Acrobat 10 Pro);
  - f) DWG Viewer (Autodesk DWG Trueview 2010 or similar); and
  - g) encryption software using an industry standard encryption tool (BeCrypt or similar). The keyfile shall be stored in a secure location.
- 4.6.3 In addition to the software to be installed on each computer, the Company shall install the following on computers as requested by the Contracting Authority:
- a) Adobe Acrobat 10 Pro (3 copies to be provided);
  - b) AutoCAD 2013 (2 copies to be provided);
  - c) Microsoft Project 2013 (4 copies to be provided);
  - d) Primavera P6 Professional Project Management (4 copies to be provided); and
  - e) Adobe Creative Suite (3 copies to be provided)
- 4.6.4 **Printers**
- 4.6.4.1 The following are required to be installed in the respective rooms described in Sections 2:
- a) Lexmark C762DN colour laser printer or similar approved;
  - b) Lexmark T630 black and white laser printer or similar approved.
  - c) Canon LBP5970 colour A3 printer or similar as approved with extended warranty;
  - d) Plotter – Canon image PROGRAF iPF720 large format printer or similar as approved with extended warranty; and
  - e) Photocopier / multi-function device – Canon iR6880Ci or similar capable of A3 / A4 colour and black and white printing, as approved with extended warranty.
- 4.6.4.2 All equipment shall be provided new and installed and commissioned by a reputable Quality Assured supplier (BS EN ISO 9001). The equipment shall be covered by a hardware maintenance contract with an eight hour maximum response time for repair or replacement.
- 4.6.4.3 All photocopiers, printers and plotters shall be connected to the computer network (LAN) and shall have associated network software and cabling to allow use by all Contracting Authority' staff.
- 4.6.4.4 The photocopier / multi-function devices shall be capable of photocopying, printing from computers linked to the network, scanning / emailing documents, document stapling, faxing etc.
- 4.6.4.5 The Company shall maintain and replace all photocopier / multi-function devices, colour printers and plotter as necessary.

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4.6.4.6 The Company shall provide paper as required for the photocopiers, printers and plotters until the end of Period 2. Copying material, toner/ink, cartridges and paper shall be replenished as required

**4.6.5 Photographic and Video Equipment**

4.6.5.1 The following equipment shall be provided, installed, maintained, and replaced where required, by the Company:

- a) 20 digital cameras, also capable of recording video clips, and peripheral equipment including carry case (minimum specification as follows: Sensor resolution of 12 megapixels, optical zoom of 10x and 2 high speed memory cards, each of size of 8 GB) along with the associated software and cables for downloading pictures onto PCs and printing; and
- b) 1 digital camcorder utilising HDD disc media and peripheral equipment including carry case (minimum specification as follows: 2 megapixel CCD, optical zoom of 10x, digital zoom of 200x and screen size of 2.5 inches) along with the associated software and cables for downloading onto PCs. Additional disc media to be provided by the Company as requested by the Contracting Authority.

4.6.5.2 All photographic and video equipment shall be retained by the Contracting Authority for the duration of the New Works plus 5 years.

**4.6.6 Projector**

4.6.6.1 The projector mounted in Room Type D shall be compatible with the laptops specified in Section 4.2. The projector shall have a minimum resolution of SVGA 800x600 native.

4.6.6.2 In addition to the projector specified in Room Type D, the Company shall provide a standalone projector of the same specification but of suitable size to allow easy transportation, together with carrying case, cables and other ancillary items.

**5 Schedule of Surveying and Other Equipment**

5.1 The following equipment shall be for the exclusive use of the Contracting Authority and his staff, and shall be as described, or equivalent. The Company shall be responsible for the supply of labour and materials for cleaning and maintaining the equipment throughout the period of the New Works:

| Quantity | Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2        | Robotic Total Station with the following equipment and specifications:<br>(a) Fitted with absolute angle encoder with diametrical reading with standard deviation (DIN 18723) of 3" and minimum reading of 1" of arc. Distance accuracy of 1 millimetre + 2ppm (ISO 17123-4) with capability of measuring to 2.5 kilometres to a single prism. Capable of measuring to all types of prism targets including retro tape. Fitted with optical plummet. Servo drives with speed of not less than 115 degrees a second. Must support both passive locking to prisms and active tracking of prisms with infrared diodes. Typical search time to locate prisms should be specified at 2-10 seconds. The unit must be able to be fully controlled from the pole and be entirely cable-free.<br>(b) Logger at pole should be fully ruggedized (MIL-STD-810F); have a Windows Mobile operating system and a battery life of up to 30 hours. Application programs to be included – surveying, free station, stakeout, reference line / arc, area calculations, measure rounds, traverse adjustment and roading. The roading program should support the |

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**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

| Quantity | Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | <p>reading and use of the industry standard MX GENIO format directly (without conversion to maintain integrity of the data). An optional monitoring program should be available as an upgrade if required.</p> <p>(c) Heavy duty wooden tripod, tribrach, 3 internal batteries, (4400Ah each), detail pole and large 360°circular prism fitted with 8 channel IR diodes run from an internal battery.</p> <p>(d) Half transverse kit comprising a heavy duty wooden tripod, tribrach, prism base, optical plummet and prism.</p> <p>If GPS technology is being used on the contract then the Company must supply a GPS(GNSS) receiver to meet the following specifications:</p> <ul style="list-style-type: none"> <li>(i) Completely cable-free 220 channel GNSS rover capable of tracking GPS frequencies (L1, L2, L2C &amp; L5) and GLONASS frequencies (L1, L2). Fully integrated radio or GPRS modem capable of receiving RTCM 3.x and CMRx corrections. Receiver should be fully ruggedized to IP67 rating.</li> <li>(ii) Accuracy (RMS) in Kinematic mode of 8 millimetres+1ppm in plan and 15 millimetres +1ppm in height. Accuracy (RMS) in Network RTK mode of 8 millimetres +0.5ppm in plan and 15 millimetres +0.5ppm in height.</li> <li>(iii) Initialisation reliability should be &gt;99.9% and standard time for initialisation should be less than 10 seconds.</li> <li>(iv) Logger at pole should be fully ruggedized (MIL-STD-810F); have a Windows Mobile operating system and a battery life of up to 30 hours. Application programs to be included – surveying, stakeout, reference line / arc, area calculations and roading. The roading program should support the reading and use of the industry standard MX GENIO format directly (without conversion to maintain integrity of the data).</li> <li>(v) Heavy duty wooden tripod, tribrach, GPS Tribrach adapter, 2 internal batteries, (2400Ah each) and detail pole.</li> <li>(vi) If a local transformation or calibration is being used by the Company, the parameters must be supplied.</li> </ul> <p>While the total station / GNSS receiver must meet all the above requirements, the total station / GNSS receiver shall not be to any lesser specification than that used by the Company’s staff and shall be compatible with the Company’s method of setting out / setting out data and equipment.</p> <p>The Company shall provide training as requested by the Contracting Authority on the operation and use of the Total Station.</p> |
| 2        | <p>Automatic level with minimum specification as follows: 30x magnification, accuracy per 1 kilometre double levelling of 0.8 millimetres, single measurement accuracy of 1.2 millimetres at 30 metres.</p> <p>Aluminium tripod with cover and strap for carrying.</p> <p>Aluminium staff and detachable staff bubble.</p> <p>Notwithstanding the above requirements, the automatic level shall not be to any lesser specification than that used by the Company’s staff.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |



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**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

| Quantity | Item                                                                                                                                                                                                                                                                                                                                                                 |                                                                        |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
|          | The Company shall provide training as requested by the Contracting Authority on the operation and use of the automatic level.                                                                                                                                                                                                                                        |                                                                        |
| 4        | Electronic cover meter (with facility for downloading to computer)                                                                                                                                                                                                                                                                                                   |                                                                        |
| 8        | 30 metre measuring steel tape                                                                                                                                                                                                                                                                                                                                        | To be renewed by the Company as requested by the Contracting Authority |
| 10       | 50 metre measuring fibron tape                                                                                                                                                                                                                                                                                                                                       |                                                                        |
| 5        | 30 metre measuring fibron tape                                                                                                                                                                                                                                                                                                                                       |                                                                        |
| 60       | 5 metre pocket measuring tapes                                                                                                                                                                                                                                                                                                                                       |                                                                        |
| 10       | Bricklayers string lines                                                                                                                                                                                                                                                                                                                                             |                                                                        |
| 10       | Universal straight edge with wedge gauge for measuring depressions                                                                                                                                                                                                                                                                                                   |                                                                        |
| 10       | 0.9 metre electric spirit level with batteries as required                                                                                                                                                                                                                                                                                                           |                                                                        |
| 1        | 20 inch colour TV with DVD recorder.                                                                                                                                                                                                                                                                                                                                 |                                                                        |
|          | Recordable DVD's, supplies to be renewed by the Company as and when required.                                                                                                                                                                                                                                                                                        |                                                                        |
| 60       | Flashlights with batteries – replaced as and when required                                                                                                                                                                                                                                                                                                           |                                                                        |
| -        | Waterproof marking chalk in various colours.                                                                                                                                                                                                                                                                                                                         | Supplies to be renewed by the Company as and when required             |
| -        | Sustainable spray paint in various colours.                                                                                                                                                                                                                                                                                                                          |                                                                        |
| -        | Nails and survey nails as and when required.                                                                                                                                                                                                                                                                                                                         |                                                                        |
|          | Wooden posts, stakes and planks as and when required                                                                                                                                                                                                                                                                                                                 |                                                                        |
| 12       | Claw hammer                                                                                                                                                                                                                                                                                                                                                          |                                                                        |
| 4        | Lump / club hammer (4 pound)                                                                                                                                                                                                                                                                                                                                         |                                                                        |
| 8        | Maximum and minimum thermometers in weatherproof case                                                                                                                                                                                                                                                                                                                |                                                                        |
| 4        | Sewer inspection lamp with supply of batteries or chargers                                                                                                                                                                                                                                                                                                           |                                                                        |
| 5        | Set of gas detection apparatus with charger                                                                                                                                                                                                                                                                                                                          |                                                                        |
| 2        | <p>Noise Monitoring Equipment</p> <p>CEL Noise measuring equipment, or similar approved, including suitable tripods and an all-weather enclosure and consisting of:</p> <p>1 No CEL 162E Environmental noise analyser in carrying case</p> <p>1 No CEL 177 acoustic calibrator complete with couplers</p> <p>1 No GR 1560 - 9522, 0.5 inch microphone windshield</p> |                                                                        |

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**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

| Quantity | Item                                                                    |
|----------|-------------------------------------------------------------------------|
|          | 1 No Battery charger                                                    |
|          | 2 No Set of rechargeable batteries for CEL 162E above                   |
|          | 1 No Spare microphone windshield compatible with CEL 162E above.        |
|          | 1 No CEL 193 precision integrating impulse sound level meter.           |
|          | 1 No 12 millimetres foam microphone windshield compatible with CEL 193. |

5.2 The Company shall make available to the Contracting Authority the use of any other survey equipment on the New Works Site as required.

**6 Supply of Documentation**

6.1 The Company shall supply and maintain for the sole use of the Contracting Authority one copy, on compact disk from the Stationary Office (licensed for use by and up to 60 concurrent users), suitable for display on the equipment specified in Sections 4 of Appendix 1/1 of this Specification, the following documents:

- a) The Manual of Contract Documents for Highway Works;
- b) Design Manual for Roads and Bridges;
- c) Eurocodes;
- d) Traffic Signs Manual
- e) Current British Standard and Code of Practice or computerised equivalent all as referred to or cross referenced in this Contract, the Code of Construction Practice or used in the Design. Alternatively provision of access to an online electronic database for the Employer and staff e.g. IHS UK; and
- f) Relevant Road Notes.

6.2 All documents shall be current at the Effective Date.

**7 Safety and Protective Clothing**

7.1 Sets of the following shall be supplied new by the Company within 4 weeks after commencement of the New Works in sizes as required by the Contracting Authority.

| Quantity | Item                                                                                                                                                                                                                                                                                                                                                                             |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 80 pairs | Wellington boots with steel toe cap and mid-sole                                                                                                                                                                                                                                                                                                                                 |
| 80 pairs | Protective safety boots with steel toe cap and mid-sole (type to be as agreed by Contracting Authority' Representative)                                                                                                                                                                                                                                                          |
| 80       | Fleece jacket (colour black) 380g/m with 2 zipped pockets and draw cord                                                                                                                                                                                                                                                                                                          |
| 80       | Two band and brace high visibility yellow coats made from high performance waterproof and breathable fabric conforming to EN471 Class 3 and EN343 3,3. (GORE-TEX or equivalent type as agreed with the Contracting Authority' Representative). Jackets shall have AWPR/B-T logo on the back (large size logo) with AWPR/B-T logo on the front left chest area (small size logo). |
| 80 pairs | Waterproof overtrousers with High Visibility bands                                                                                                                                                                                                                                                                                                                               |

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|             |                                                                                                            |
|-------------|------------------------------------------------------------------------------------------------------------|
| 100         | Safety helmets with comfort band chin straps and detachable ear defenders with AWPR/B-T logo on the front. |
| 80 pairs    | Latex grip gloves with nylon back                                                                          |
| 80 pairs    | Textured latex grip gloves with knitted back                                                               |
| 80          | Long sleeved high visibility vests to BS 6629 : Class 'A' : Appendix G Plus                                |
| 120 pairs   | Seaboot stockings                                                                                          |
| 80 pairs    | Safety glasses / goggles                                                                                   |
| As required | Disposable gloves (latex or other suitable material)                                                       |

- 7.2 The Company shall provide an additional 8 sets of wellington boots, safety boots, fleece jackets, high visibility yellow coats, waterproof overtrousers, safety helmets, industrial rubber gloves, industrial logger gloves, long sleeved high visibility vests, seaboot stockings, and safety glasses or goggles each year as requested by the Contracting Authority.
- 7.3 The Company shall make provision for replacing worn, damaged or lost safety and protective clothing or other PPE as requested by the Contracting Authority until the end of Period 2.
- 7.4 Additional protective clothing for up to 15 visitors shall be made available on request, for periods of up to one day, comprising 15 sets of high visibility waterproof anorak and safety helmets and safety boots.
- 7.5 The Company shall provide to the Contracting Authority any other safety and protective clothing or other PPE deemed necessary by the Company's safe method of working or conditions arising during the execution of the New Works e.g. encountering contaminated land.

**8 Health and Safety Equipment**

- 8.1 Health and Safety Publications to be provided by the Company:
- Health and Safety Information for Employees Regulations 1989 (Poster and 20 leaflets with the address of the local enforcing authority of the Health and Safety Executive and the Employment Medical Advisory Service office filled in);
  - First aid poster giving the location of first aid facilities and the name and location of the trained first aiders and the appointed person or first aider who deputises in their absence;
  - Electric Shock first aid placard (20 copies) C200: 09/06;
  - Skin Cancer caused by Pitch & Tar (20 copies) - HSE MSB4: 9/98;
  - Leptospirosis (20 copies) Health and Safety Executive leaflet IND 84: 08/06;
  - BI.510 National Insurance Accident Record Book;
  - Forms 2508 as required for reporting dangerous occurrences and accidents to the Health and Safety Executive;
  - Managing Health and Safety in Construction, Approved Code of Practice HSE L144;

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- i) The Safe Use of Vehicles on Construction Sites HSE;
- j) Safe work in Confined Spaces, Approved Code of Practice HSE L110;
- k) Electrical Safety on Construction Sites Guidance HS(G) 141;
- l) The Work at Heights Regulations 2005: A brief Guide INDG401;
- m) Essentials of Health and Safety at Work HSE;
- n) Memorandum of Guidance on the Electricity at Work Regulations 1989 HSE HSR25;
- o) Safety at Streetworks and Road Works, A Code of Practice DTLR;
- p) Simple Guide to the Lifting Operations and Lifting Equipment Regulations 1998 INDG 290; and
- q) Other guides or codes of practice or the like relevant to pertinent legislation.

Note: The most recent edition of each publication shall be supplied and any other required.

- 8.2 The Company shall arrange and supply appropriate health and safety training for the Contracting Authority' staff regarding its safety procedures.
- 8.3 The Company shall provide adequate first aiders and fire wardens for the offices and shall provide training and equipment as necessary for any Contracting Authority personnel to be designated as first aiders or fire wardens.
- 8.4 The Company shall arrange for regular safety drills at the New Works Site and the offices, including, but not limited to safety drills relating to incidents that may arise during the execution of the New Works, involving the emergency services in the safety drills as necessary.

**9 Initial Consumable Stores**

- 9.1 The Company shall provide regular supplies of consumable items including, but not limited to, those identified in the list below as required for the sole use of the Contracting Authority; the quantity stated for each item in the list below shall be supplied immediately or within reasonable time after commencement of the New Works.

| Quantity | Description                                     |
|----------|-------------------------------------------------|
| 100      | A4 lever arch files with dust covers            |
| 100      | A3 ring binder files                            |
| 100      | Set A4 file indices (plastic) (A - Z or 1 – 20) |
| 20       | Set A3 file dividers                            |
| 40       | A4 fold over clipboards                         |
| 100      | A4 pads ruled feint and margin (200 sheets)     |
| 5        | A4 pads graph paper                             |
| 5        | A3 pads graph paper                             |
| 40       | Ruled all weather cover A6 site books           |
| 80       | Ruled hard cover A4 books                       |
| 24       | Standard office stapler and supply of staples   |

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**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

| <b>Quantity</b> | <b>Description</b>                                                            |
|-----------------|-------------------------------------------------------------------------------|
| 4               | Heavy duty stapler (200 sheet capacity) and supply of staples (various sizes) |
| 12              | 2-hole paper punch                                                            |
| 4               | Heavy duty 2-hole paper punch (65 sheet capacity)                             |
| 4               | Heavy duty 4-hole paper punch (150 sheet capacity)                            |
| 10              | Box DVD-R (10 per box)                                                        |
| 10              | Box CD-R 650 MB 74 min recordable disc (25 per box)                           |
| 10              | Box 25 millimetres paper clips                                                |
| 10              | Box large drawing pins                                                        |
| 10              | Bottle white correction fluid                                                 |
| 100             | Ball point pens (black)                                                       |
| 100             | Ball point pens (blue)                                                        |
| 100             | Ball point pens (red)                                                         |
| 50              | Felt tip pens (Fineliner or equivalent) (black)                               |
| 50              | Felt tip pens (Fineliner or equivalent) (red)                                 |
| 50              | Felt tip pens (Fineliner or equivalent) (green)                               |
| 100             | Pencils                                                                       |
| 10              | Box coloured pencils (12 assorted)                                            |
| 20              | Pack highlighter marker pens (6 assorted)                                     |
| 10              | Pack marker pens (various colours) for use on flip charts                     |
| 40 sets         | Dry whiteboard markers in various colours                                     |
| 200             | A4 manila envelopes                                                           |
| 200             | DL gummed envelopes                                                           |
| 10              | Stick adhesive (Pritt stick or equivalent)                                    |
| 20              | Roll Sellotape or equivalent with dispenser (25 millimetres wide)             |
| 20              | Roll invisible tape with dispenser (25 millimetres wide)                      |
| 40              | "Post it" note pads or equivalent 76 x 127 millimetres                        |
| 4               | Roll drafting tape                                                            |
| 5               | Time and date received dial stamp (self inking)                               |
| 5               | "Uncontrolled" Stamp (self inking)                                            |
| 50              | Foolscap document wallet                                                      |
| 200             | A4 clear plastic file pockets (top opening)                                   |
| 100             | A4 clear plastic file pockets (top and side opening)                          |
| 250             | Suspension files with tabs and inserts                                        |

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**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority**

| <b>Quantity</b> | <b>Description</b>                                                                   |
|-----------------|--------------------------------------------------------------------------------------|
| 100             | Plastic slide binders (9 millimetres)                                                |
| 2               | Spiral/coil binding machine                                                          |
| 200             | Binding comb ring coils (various sizes 6 millimetres – 25 millimetres)               |
| 2               | A1 paper trimmer and stand                                                           |
| 40              | Filing trays with risers (in addition to the filing trays specified in room types A, |
| 2               | A3 laminator                                                                         |
| 200             | A3 laminating pouches                                                                |
| 400             | A4 laminating pouches                                                                |
| 40              | Boxes A4 photocopier / printer paper, ream wrapped, 5 reams per box                  |
| 40              | Reams A3 photocopier / printer paper                                                 |
| 4               | Box A4 photocopier / printer paper (blue), ream wrapped, 5 reams per box             |
| 4               | Box A4 photocopier / printer paper (green), ream wrapped, 5 reams per box            |
| 4               | Pack of card (160gsm), 250 sheets, white                                             |
| 8               | Rolls paper for plotter                                                              |
| 40              | Small fold back binder clips                                                         |
| 40              | Medium fold back binder clips                                                        |
| 5               | Packs thin rubber bands                                                              |
| 5               | Packs large rubber bands                                                             |
| 40              | Erasers                                                                              |
| 1               | Pack of clear report binding covers, 100 sheets                                      |
| 6               | A4, one day to a page diary, provided in December of each year for use the           |

**10 Office Insurance**

- 10.1 The Company shall provide for the insurance against all risks, of the contents of the offices including the property of the Contracting Authority and his staff and representatives together with any staff of the Contracting Authority and representatives who may visit the offices from time to time. This includes personal effects required in the normal course of duty and other computer equipment supplied by the Contracting Authority.

**11 Heating and Lighting**

- 11.1 The offices shall be adequately provided with electric heating capable of maintaining a uniform room temperature of at least 20 degrees centigrade and shall be lit with electrical fluorescent diffused lighting to a standard acceptable for a drawing office to achieve a minimum of 500 lux measured at the horizontal tops of desks. An external light shall be provided over the entrance to the building shielded to prevent misleading traffic on any public road.

**Appendix 1/1: Temporary Accommodation and Equipment for the Contracting Authority****12 Required Time Duration for Providing and Maintaining Accommodation and Equipment**

12.1 Period 1: Period 1 means

12.1.1 The Principal Offices including their contents, access roads and hard-standings thereto, shall be available for occupation within 4 weeks of the Effective Date and shall be maintained and serviced until 13 weeks after the issue of the Final Permit to Use Certificate.

12.2 Period 2: Period 2 means

12.2.1 The reduced office accommodation including contents applicable to the rooms defined, access road and hard-standings, shall be maintained and serviced from the expiry of the Period 1 until 26 weeks after the issue of the Final Completion Certificate.

**Appendix 1/2: Vehicles for the Contracting Authority**

**1 Vehicles for the Contracting Authority**

- 1.1 The following specification describes the vehicle requirements for the New Works.
  - 1.1.1 The vehicles shall be provided new and shall be maintained by the Company throughout the period required for the New Works as defined in Section 1.1.11 below. The Company shall supply all fuel and consumables throughout the period defined in Section 1.1.11 below. The vehicles shall be returned to the Company at the end of the period defined in 1.1.11 below.
  - 1.1.2 Vehicles shall be provided for the exclusive use of the Contracting Authority and its representatives.
  - 1.1.3 The Company shall ensure that replacement vehicles are provided for those being maintained or serviced or made unavailable to the Contracting Authority for any other reason.
  - 1.1.4 Vehicles shall be cleaned inside and outside by the Company once per week or as otherwise requested by the Contracting Authority.
  - 1.1.5 The Company shall provide secure parking for the vehicles when the vehicles are not in use.
  - 1.1.6 The Company shall indemnify the Contracting Authority, Contracting Authority’s Representatives and their respective staff authorised to drive the vehicles against claims in respect of damage to vehicles including claims from passengers, claims in respect of damage and personal injury or death.
  - 1.1.7 The Company shall allow for all vehicles provided for the Contracting Authority to be used off the New Works Site on regular journeys between the New Works Site and other locations for purposes related to the Project. Such locations shall include, but not be limited to Scottish Government offices; local authority offices; offices of other statutory bodies (e.g. SNH, SEPA etc.); homes or offices of landowners or their agents; any locations or premises used by the Company adjacent to, or in the vicinity of the New Works; travel between the New Works Site and local transport interchanges, any other venues or locations as agreed with the Company, and the like.
  - 1.1.8 The Company shall allow for the authorised use of vehicles outside the Contracting Authority’s working hours.
  - 1.1.9 The Company shall provide training for driving vehicles on the New Works Site for Contracting Authority’s staff, as requested by the Contracting Authority.
  - 1.1.10 All vehicles provided for the Contracting Authority shall bear the legend “Motorway Maintenance” and retro-reflective red and fluorescent yellow chevron markings at the rear of the vehicle. All vehicles provided for the Contracting Authority shall be free from markings identifying any company associated with the Agreement.
  - 1.1.11 The following vehicles of EU manufacture shall be provided:

| Type | Number Required | Period Required                                       |
|------|-----------------|-------------------------------------------------------|
| A    | 5               | Period 1 and 2 as defined in Appendix 1/1 Section 12. |
| B    | 30              | Period 1 as defined in Appendix 1/1 Section 12        |



## Part 4: Specification

**Appendix 1/2: Vehicles for the Contracting Authority**

| Type | Number Required | Period Required                                       |
|------|-----------------|-------------------------------------------------------|
| C    | 6               | Periods 1 and 2 as defined in Appendix 1/1 Section 12 |

- 1.1.12 The minimum requirements of the above vehicle types shall be as defined in Sections 1.2 – 1.4 below.
- 1.1.13 Where the Company wishes to provide equivalent vehicles to the example named vehicles below, the specification of the vehicles provided shall include all equipment and features provide as standard on the example named vehicles plus those additional requirements specified for each below.
- 1.2 Type A – 7 seat Station Wagon, min 2500cc (Land Rover Discovery or equivalent approved by the Contracting Authority)
- 1.2.1 This vehicle shall be suitable for on and off-road use, have 4-wheel drive, power steering and be supplied in light colour. The vehicle shall be free from markings identifying any company associated with this Agreement. Equipment to be provided with the vehicle shall include: fire extinguisher, first aid kit, hazard flashing unit, full size spare wheel, fuel filler cap lock, bonnet lock and spare wheel lock, link mats front and rear, tow rope, towing hooks front and rear, sign boards reading “Motorway Maintenance” in accordance with Diagram 7404 of Schedule 12, Part V of the *Traffic Sign Regulations and General Directions 2002* on the rear of the vehicles (the lettering shall be the largest x height that can be accommodated out of the following heights: 37.5, 50, 62.5, 75 millimetres), retroreflective red and fluorescent yellow chevrons on the rear of the vehicle and a roof-mounted amber flashing light bar comprising at least 2 light sources in accordance with Section O5.3 of Chapter 8 of the Traffic Signs Manual and the *Road Vehicle Lighting Regulations and General Directions 2002* and 5 (minimum) rear seats.
- 1.3 Type B – 4 seat Short Wheelbase Station Wagon, min 2000cc (Land Rover Freelander or equivalent approved by the Contracting Authority)
- 1.3.1 This vehicle shall be suitable for on and off-road use, have 4 wheel drive, power steering and be supplied in light colour. The vehicle shall be free from markings identifying any company associated with this Agreement.
- 1.3.2 Equipment to be provided with the vehicle shall include: fire extinguisher, first aid kit, hazard flashing unit, full size spare wheel, fuel filler cap lock, bonnet lock and spare wheel lock, link mats front and rear, tow rope, towing hooks front and rear, sign boards reading “Motorway Maintenance” in accordance with Diagram 7404 of Schedule 12, Part V of the *Traffic Sign Regulations and General Directions 2002* on the rear of the vehicles (the lettering shall be the largest x height that can be accommodated out of the following heights: 37.5, 50, 62.5, 75 millimetres), retroreflective red and fluorescent yellow chevrons on the rear of the vehicle and a roof mounted amber flashing light bar comprising at least 2 light sources in accordance with Section O5.3 of Chapter 8 of the Traffic Signs Manual and the *Road Vehicle Lighting Regulations and General Directions 2002* and 2 (minimum) rear seats.
- 1.4 Type C – 5 door Estate car, 1800 cc (Ford Focus or equivalent approved by the Contracting Authority)
- 1.4.1 This vehicle shall have a carrying capacity of at least 0.25 tonne, a minimum clearance (unladen) of 150 millimetres and independent suspension. The vehicle shall be supplied in light colour and shall be free from markings identifying any company associated with this Agreement.

**Appendix 1/2: Vehicles for the Contracting Authority**

Equipment to be provided with the vehicle shall include: full size spare wheel, fire extinguisher, first aid kit, tow rope, luggage straps suitable for carrying survey equipment, sign boards reading "Motorway Maintenance" in accordance with Diagram 7404 of Schedule 12, Part V of the *Traffic Sign Regulations and General Directions 2002* on the rear of the vehicles (the lettering shall be the largest x height that can be accommodated out of the following heights: 37.5, 50, 62.5, 75 millimetres), retroflective red and fluorescent yellow chevrons on the rear of the vehicle and a roof mounted amber flashing light bar comprising at least 2 light sources in accordance with –Section O5.3 of Chapter 8 of the Traffic Signs Manual and the *Road Vehicle Lighting Regulations and General Directions 2002*.

**Appendix 1/3: Communicating Systems for the Contracting Authority****1 Mobile Telephones**

- 1.1 The communications equipment shall be provided new and shall be maintained by the Company throughout the period of the New Works and replaced as required. Each of the Contracting Authority's personnel and their Representatives that will be on Site until the end of Period 2 shall retain a mobile telephone until the end of Period 2 as defined in Section 12 of Appendix 1/1. All other mobile telephones shall be returned to the Company at the end of Period 1 as defined in Section 12 of Appendix 1/1.
- 1.2 The equipment shall comprise 60 hand portable mobile telephones for designated users from the Contracting Authority's personnel and their Representatives, complete with carrying case, and charger. Spare chargers shall be provided for 30 of the telephones, as directed by the Contracting Authority. 12 mobile telephones for the use of the Contracting Authority's personnel and their Representatives shall be supplied if Temporary Initial Accommodation is provided as permitted by Section 1.25 of Appendix 1/1 of this Specification.
- 1.3 The Company shall provide an additional 5 hand portable mobile telephones for use as 'pool-phones' by the Contracting Authority personnel or their Representatives who may visit and work at the Site for short periods.
- 1.4 The Company shall allow for all calls from each of the mobile telephones and shall bear all costs associated with each phone that is supplied for the use of the Contracting Authority personnel and its Representatives.
- 1.5 The Company shall replace any mobile telephones that are lost, damaged or require replacement and shall arrange for the maintenance of mobile telephones as required.
- 1.6 The Company shall allow for 10 of the mobile phones provided in accordance with Section 1.2 above, for users as directed by the Contracting Authority, to permit international calls to be received and made from the UK and to have international roaming facilities allowing calls to be received and made overseas.
- 1.7 The Company shall provide a mobile telephone for each of the Contracting Authority's personnel and their Representatives involved in monitoring of any off Site Works, such as casting and fabrication Works. All of the telephones shall permit international calls to be received and made from the UK and overseas.
- 1.8 The Company shall not be responsible for the cost of any non-project related calls made by the Contracting Authority's personnel and their Representatives on mobile phones provided in accordance with this Appendix and shall forward to the Contracting Authority on a monthly basis details of any calls it considers may not be business related. The Contracting Authority shall confirm to the Company within 4 weeks of receipt of said details any non-project related calls made by the Contracting Authority's personnel and their Representatives. The Company shall operate a system to allow reimbursement to the Company by individual members of the Contracting Authority's personnel and their Representatives of the cost of any non-project related calls made.

**Appendix 1/5: Testing to be Carried out by the Company****1 Notes:**

- 1.1 Unless otherwise stated below, all sampling and testing in this Appendix shall be undertaken by the Company.
- 1.2 Tests comparable to those specified in this Appendix will be necessary for any equivalent work, goods or materials proposed by the Company (See sub-clause 105.4 of the Specification)
- 1.3 (N) indicates that a United Kingdom Accreditation Service (UKAS) or European Cooperation for Accreditation of Laboratories (EAL) accredited laboratory sampling and test report or certificate is required.
- 1.4 Unless otherwise shown in this Appendix, tests for work, goods or materials as scheduled under any one Clause are required for all such work, goods or materials in the Works.
- 1.5 Cube strengths are not required for concrete complying with Clause 2602 of the Specification.
- 1.6 Unless otherwise shown in this Appendix, test certificates for work, goods or materials as scheduled under any one Clause are required for all such work, goods or materials in the Works.
- 1.7 The Company's attention is drawn to the Requirements for additional testing requirements.
- 1.8 The Company shall incorporate in the schedule of tests required under Clause 36 of the Conditions of Agreement as a minimum the tests detailed in the following table together with all additional tests required by the Agreement.
- 1.9 All samples and cores taken for testing in accordance with series 900 of the Specification shall be photographed against a suitable base scale to the approval of the Contracting Authority.
- 1.10 The photographs, together with corresponding RRS1 and CRS1 Forms included in Clause 976AR of Appendix 0/1, shall be delivered to the Contracting Authority within seven days of the sampling on site.
- 1.11 All reference to FWD within this Appendix shall mean Falling Weight Deflectometer as described in HD29 of the DMRB.
- 1.12 All references to LWD within this Appendix shall mean Light Weight Deflectometer as described in Clause 895 of Interim Advice Note 73/06. The use and interpretation of the LWD shall be in accordance with Interim Advice Note 73/06 and the "LWD Good Practice Guide" (2009) produced by Loughborough University.
- 1.13 Where supplier declaration is required for material properties then this shall be in accordance with the factory production control system outlined in Annex C and D respectively of BS EN 13285.

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**Appendix 1/5: Testing to be Carried out by the Company**

| Clause      | Works, Goods or Material                                   | Test                                          | Frequency of Testing                                       | Test Certificate        | Comments                                          |
|-------------|------------------------------------------------------------|-----------------------------------------------|------------------------------------------------------------|-------------------------|---------------------------------------------------|
| Series 300  |                                                            |                                               |                                                            |                         |                                                   |
| 306         | Permanent fencing                                          |                                               |                                                            |                         | Quality management scheme applies                 |
|             | Concrete components                                        | Cover to reinforcement                        | 1 per consignment (maximum 1 per 100 components) (BS 1722) |                         |                                                   |
| 308         | Gates and stiles                                           |                                               |                                                            |                         | Quality management scheme applies                 |
|             | Reinforced concrete posts                                  | Cover to reinforcement                        | 1 per consignment (maximum 1 per 100 components) (BS3470)  |                         |                                                   |
| 308 and 311 | Preservation of timber                                     | Full sapwood penetration                      | As required in sub-Clause 311.2(v)                         | Required for each batch | Quality management scheme applies.                |
| Series 400  |                                                            |                                               |                                                            |                         |                                                   |
| 402         | Welding                                                    | Welding procedures (Manufacturer's tests)     | (Every seven years)                                        | Required                | Quality management scheme applies                 |
|             |                                                            | Welder qualification (Manufacturer's tests)   | As required in sub-Clause 402.6 (iii)                      |                         |                                                   |
|             |                                                            | Production testing (Manufacturer's tests)     | As required in sub-Clause 402.6(iv)                        |                         |                                                   |
|             | Welded joints                                              | Destructive testing                           |                                                            |                         |                                                   |
| 403         | Anchorage and attachment systems for use in drilled holes. | Ultimate tensile load (Manufacturer's tests). |                                                            | Required                | To provide well attested and documented evidence. |
| 404         | Anchorage in drilled holes                                 | On-site tensile load test                     | As required in Appendix 4/1                                | Required                |                                                   |
|             | Post foundations                                           |                                               |                                                            |                         |                                                   |
| 406         | Vehicle Parapets.                                          |                                               |                                                            | Required                | Quality Management Scheme applies                 |
| 407         | Anchorage and attachment systems for use in drilled holes  | Ultimate tensile load (Manufacturer's tests)  |                                                            | Required                | To provide well attested and documented evidence. |

## Part 4: Specification

**Appendix 1/5: Testing to be Carried out by the Company**

| Clause               | Works, Goods or Material   | Test                                                                                                          | Frequency of Testing        | Test Certificate | Comments                                                |
|----------------------|----------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------|------------------|---------------------------------------------------------|
| Series 400 continued |                            |                                                                                                               |                             |                  |                                                         |
| 409                  | Vehicle parapet posts      | Production testing as specified in BS 6779-1 1998 (Amd No 14290, 21 March 2003)<br><br>(Manufacturer's tests) |                             | Required         | Certification in accordance with Clause 409 is required |
| 410                  | Anchorage in drilled holes | On site tensile load test                                                                                     | As required in Appendix 4/1 | Required         |                                                         |

Part 4: Specification

Appendix 1/5: Testing to be Carried out by the Company

| Clause     | Works, Goods or Material             | Test                                                                             | Frequency of Testing          | Test Certificate | Comments                             |                   |
|------------|--------------------------------------|----------------------------------------------------------------------------------|-------------------------------|------------------|--------------------------------------|-------------------|
| Series 500 |                                      |                                                                                  |                               |                  |                                      |                   |
| 501        | Pipes for drainage and service ducts | Vitrified clay                                                                   |                               |                  | Product certification scheme applies |                   |
|            |                                      | Concrete - PC/SRC                                                                | not exceeding 900mm diameter  |                  |                                      |                   |
|            |                                      | Concrete - Pre-stressed                                                          |                               |                  |                                      |                   |
|            |                                      | Iron - cast                                                                      |                               |                  |                                      |                   |
|            |                                      | Iron - ductile                                                                   |                               |                  |                                      |                   |
|            |                                      | PVC-U                                                                            |                               |                  |                                      |                   |
|            |                                      | GRP                                                                              |                               |                  |                                      |                   |
|            |                                      | Plastics. See Table 5/1                                                          |                               |                  |                                      |                   |
|            |                                      | Corrugated steel                                                                 | (Manufacturer's tests)        |                  |                                      | Required (AASHTO) |
|            |                                      | Corrugated steel bitumen protection                                              | Not exceeding 900 mm diameter |                  |                                      |                   |
|            |                                      | Other materials                                                                  |                               |                  |                                      | Required          |
| 503        | Pipe bedding                         | Grading and fines content                                                        | 1 per week (min of 3)         |                  | Required                             |                   |
|            |                                      | Water-soluble sulphate (WS) content (N)                                          | 5 per source                  |                  |                                      |                   |
|            |                                      | Oxidisable sulphides (OS) content and total potential sulphate (TPS) content (N) | 5 per source                  |                  |                                      |                   |
|            |                                      | Resistance to fragmentation (N)                                                  | 1 per source                  |                  |                                      |                   |

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**Appendix 1/5: Testing to be Carried out by the Company**

| Clause               | Works, Goods or Material    | Test                                                                             | Frequency of Testing | Test Certificate | Comments                             |
|----------------------|-----------------------------|----------------------------------------------------------------------------------|----------------------|------------------|--------------------------------------|
| Series 500 continued |                             |                                                                                  |                      |                  |                                      |
| 505                  | Filter medium backfill      | Plastic index (N)                                                                | 1 per source         | Required         |                                      |
|                      |                             | Resistance to fragmentation (N)                                                  | 1 per source         |                  |                                      |
|                      |                             | Water-soluble sulphate (WS) content (N)                                          | 5 per source         |                  |                                      |
|                      |                             | Oxidisable sulphides (OS) content and total potential sulphate (TPS) content (N) | 5 per source         |                  |                                      |
|                      |                             | Grading and fines content                                                        | 1 per week           |                  |                                      |
|                      |                             | Permeability (N)                                                                 | 1 per source         |                  |                                      |
| 506                  | Sealing existing drains     |                                                                                  |                      |                  |                                      |
|                      | Concrete                    |                                                                                  |                      |                  |                                      |
|                      | Grout                       |                                                                                  |                      |                  |                                      |
| 507                  | Chambers                    |                                                                                  |                      |                  | Product certification scheme applies |
|                      | Precast concrete            |                                                                                  |                      |                  |                                      |
|                      | Corrugated galvanized steel | (Manufacturer's tests)                                                           |                      | Required         | Product certification scheme applies |
|                      | Manhole steps               |                                                                                  |                      |                  |                                      |
|                      | Steel fitments              |                                                                                  |                      |                  |                                      |
|                      | Covers, grates and frames   |                                                                                  |                      |                  | Product certification scheme applies |
| Cover bolts          |                             |                                                                                  |                      |                  | Quality management scheme applies    |



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Appendix 1/5: Testing to be Carried out by the Company

| Clause               | Works, Goods or Material                        | Test                                                                             | Frequency of Testing                 | Test Certificate | Comments                                                      |
|----------------------|-------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------|------------------|---------------------------------------------------------------|
| Series 500 continued |                                                 |                                                                                  |                                      |                  |                                                               |
| 508                  | Gullies and pipe junction                       |                                                                                  |                                      |                  | Product certification scheme applies                          |
|                      | Precast concrete                                |                                                                                  |                                      |                  |                                                               |
|                      | Clay                                            |                                                                                  |                                      |                  |                                                               |
|                      | Cast iron and steel                             |                                                                                  |                                      |                  |                                                               |
| 509                  | Watertightness of joints                        | Air test                                                                         | All pipelines with watertight joints | Required         |                                                               |
| 512                  | Backfill to pipe bays                           | Grading                                                                          | 1 per 50 tonnes (min of 3)           | Required         | Minimum to allow for natural variability of sulphur compounds |
|                      |                                                 | Water-soluble sulphate (WS) content (N)                                          | 5 per source                         |                  |                                                               |
|                      |                                                 | Oxidisable sulphides (OS) content and total potential sulphate (TPS) content (N) | 5 per source                         |                  |                                                               |
| 513                  | Permeable backing to earth retaining structures | Plastic index (N)                                                                | 1 per source                         | Required         |                                                               |
|                      |                                                 | Water-soluble sulphate (WS) content (N)                                          | 5 per source                         | Required         |                                                               |
|                      |                                                 | Oxidisable sulphides (OS) content and total potential sulphate (TPS) content (N) | 5 per source                         |                  |                                                               |
|                      |                                                 | Resistance to fragmentation (N)                                                  | 1 per source                         |                  |                                                               |
|                      |                                                 | Grading                                                                          | 1 per 200 tonnes (min of 3)          |                  |                                                               |
|                      |                                                 | Permeability (N)                                                                 | 1 per source                         |                  |                                                               |
|                      | Precast hollow concrete blocks                  | (Manufacturer's tests)                                                           |                                      | Required         |                                                               |

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## Appendix 1/5: Testing to be Carried out by the Company

| Clause               | Works, Goods or Material                          | Test                           | Frequency of Testing                                                                  | Test Certificate | Comments                                                          |                       |
|----------------------|---------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------|-----------------------|
| Series 500 continued |                                                   |                                |                                                                                       |                  |                                                                   |                       |
| 514                  | Fin Drains                                        | (Manufacturer's tests)         |                                                                                       | Required         | BBA certification (or equivalent) applies                         |                       |
| 515                  | Narrow filter drains                              | Geotextile, pipes and fittings | (Manufacturer's tests)                                                                | Required         | BBA certification (or equivalent) applies                         |                       |
|                      |                                                   | Granular fill                  | Plastic index (N)                                                                     |                  |                                                                   | 1 per source          |
|                      |                                                   |                                | Resistance to fragmentation (N)                                                       |                  |                                                                   |                       |
|                      |                                                   |                                | Water-soluble sulphate (WS) content (N)                                               |                  |                                                                   | 5 per source          |
|                      |                                                   |                                | Oxidisable sulphides (OS) content and total potential sulphate (TPS) content (N)      |                  |                                                                   | 5 per source          |
|                      |                                                   |                                | Grading and fines content                                                             |                  |                                                                   | 1 per week (min of 3) |
|                      |                                                   |                                | Permeability (N)                                                                      |                  |                                                                   | 1 per source          |
| 516                  | Combined drainage and kerb systems                | Load test                      | A minimum of 1 test and not less than 1 test per 1000 metres for each type and source | Required         | Certification that the systems comply with Clause 516 is required |                       |
| 517                  | Linear Drainage Systems                           | Load Test                      | A minimum of 1 test and not less than 1 test per 1000 metres for each type and source | Required         | Certification that the systems comply with Clause 517 is required |                       |
| 518                  | Thermoplastics structured wall pipes and fittings | (Manufacturer's tests)         |                                                                                       | Required         | BBA certification (or equivalent) applies                         |                       |

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**Appendix 1/5: Testing to be Carried out by the Company**

| Clause               | Works, Goods or Material | Test                           | Frequency of Testing                                        | Test Certificate          | Comments                                                                                                                                                                                                                                                                                                                                     |  |
|----------------------|--------------------------|--------------------------------|-------------------------------------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Series 600           |                          |                                |                                                             |                           |                                                                                                                                                                                                                                                                                                                                              |  |
| 601, 631 to 637, 640 | Acceptable material      |                                |                                                             |                           | Required                                                                                                                                                                                                                                                                                                                                     |  |
|                      | Class                    | General Description            |                                                             |                           |                                                                                                                                                                                                                                                                                                                                              |  |
|                      | 1                        | General granular fill          | Grading/uniformity coefficient                              | Twice a week              |                                                                                                                                                                                                                                                                                                                                              |  |
|                      |                          |                                | mc/MCV (N)                                                  | 2 per 1000 m <sup>3</sup> |                                                                                                                                                                                                                                                                                                                                              |  |
|                      |                          |                                | IDD of chalk (N)                                            | Twice a week              |                                                                                                                                                                                                                                                                                                                                              |  |
|                      |                          | 1C only                        | Resistance to fragmentation (N)                             | Weekly                    |                                                                                                                                                                                                                                                                                                                                              |  |
|                      | 2                        | General cohesive fill          | Grading                                                     | Twice a week              | Required                                                                                                                                                                                                                                                                                                                                     |  |
|                      |                          |                                | mc/MCV/PL<br>Undrained shear strength (N)                   | 2 per 1000 m <sup>3</sup> |                                                                                                                                                                                                                                                                                                                                              |  |
|                      |                          |                                | IDD of chalk (N)                                            | Twice a week              |                                                                                                                                                                                                                                                                                                                                              |  |
|                      |                          |                                | Bulk density (pfa) (N)                                      | 2 per 1000 m <sup>3</sup> |                                                                                                                                                                                                                                                                                                                                              |  |
|                      | 3.                       | General chalk fill             | mc(N)                                                       | 2 per 1000 m <sup>3</sup> | Required                                                                                                                                                                                                                                                                                                                                     |  |
|                      |                          |                                | IDD (N)                                                     | Daily                     |                                                                                                                                                                                                                                                                                                                                              |  |
|                      | 4.                       | Landscape fill                 | Grading/mc/MCV (N)                                          | Daily                     |                                                                                                                                                                                                                                                                                                                                              |  |
|                      | 5.                       | Topsoil                        | Grading                                                     | Daily                     |                                                                                                                                                                                                                                                                                                                                              |  |
| Quality Assessment   |                          |                                | As necessary to meet requirements of Appendices 30/5 & 30/6 | Required                  | Assessment report required prior to sowing or planting<br><br>Topsoil/growing medium to be tested by a laboratory providing a soil quality assessment service (for example Soilcheck service by Scottish Agricultural College) to inform Appendix 30/6 actions 6, 7, 8, 13 & 14 (planting areas) and Appendix 30/5 action 3 (seeding areas). |  |
| 6.                   | Selected granular fill   | Grading/uniformity coefficient | 1 per 400 tonnes                                            | Required                  |                                                                                                                                                                                                                                                                                                                                              |  |
|                      |                          | PI/LL (N)                      | Daily                                                       |                           |                                                                                                                                                                                                                                                                                                                                              |  |

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**Appendix 1/5: Testing to be Carried out by the Company**

|  |  |  |                                 |                             |  |
|--|--|--|---------------------------------|-----------------------------|--|
|  |  |  | Resistance to fragmentation (N) | Weekly for on-site material |  |
|  |  |  | IDD of Chalk (N)                | Weekly                      |  |
|  |  |  | omc/mc, mc/MCV (N)              | 1 per 400 tonnes            |  |

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Appendix 1/5: Testing to be Carried out by the Company

| Clause                   | Works, Goods or Material | Test                            | Frequency of Testing                                                             | Test Certificate                                           | Comments |                  |
|--------------------------|--------------------------|---------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------|----------|------------------|
| Series 600 continued     |                          |                                 |                                                                                  |                                                            |          |                  |
| 601, 631 to 637 640 cont | 6 (cont'd)               | Selected Granular fill (cont'd) | Organic matter/water soluble (WS) sulphate content (N)                           | Weekly                                                     | Required |                  |
|                          |                          |                                 | Oxidisable sulphides (OS) content and total potential sulphate (TPS) content (N) | Weekly                                                     |          |                  |
|                          |                          |                                 | pH/chloride ion content (N)                                                      | Weekly                                                     |          |                  |
|                          |                          |                                 | Resistivity, redox and microbial activity index (N)                              | As required                                                |          |                  |
|                          |                          |                                 | Permeability                                                                     | As required or as a minimum 1 per source at each structure |          |                  |
|                          |                          |                                 | Effective angle of internal friction and effective cohesion                      | As required                                                |          |                  |
|                          |                          |                                 | Undrained and drained shear parameters (N)                                       | As required                                                |          |                  |
|                          | 6F4 and 6F5              | Selected Granular fill          | Size designation and overall grading category                                    | 1 per week                                                 |          |                  |
|                          |                          |                                 | Maximum fines and oversize categories                                            | 1 per week                                                 |          |                  |
|                          |                          |                                 | Volume stability of blast furnace slag                                           | 6 monthly                                                  |          |                  |
|                          |                          |                                 | Volume stability of steel (BOF and EAF) slag                                     | 6 monthly                                                  |          |                  |
|                          |                          |                                 | Other aggregate requirements                                                     | Annex C of BS EN 13242                                     |          |                  |
|                          |                          |                                 | Laboratory dry density and optimum water content                                 | 1 per 400 tonnes                                           |          |                  |
|                          |                          |                                 | Water content                                                                    | 1 per 400 tonnes                                           |          |                  |
| 7.                       |                          |                                 | Selected cohesive fill                                                           | Grading/mc/ MCV/ bulk density (N)                          |          | 1 per 400 tonnes |
|                          | IDD of chalk (N)         | Twice a week                    |                                                                                  |                                                            |          |                  |

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**Appendix 1/5: Testing to be Carried out by the Company**

|  |  |  | PI/LL (N)                                                       | Daily                                             |  |  |
|--|--|--|-----------------------------------------------------------------|---------------------------------------------------|--|--|
|  |  |  | Organic matter/total or water soluble (WS) sulphate content (N) | Twice a week or daily when sulphates are expected |  |  |

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Appendix 1/5: Testing to be Carried out by the Company

| Clause                                                   | Works, Goods or Material                                               | Test                                                                                                                         | Frequency of Testing                                                             | Test Certificate                                           | Comments            |
|----------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------|---------------------|
| Series 600 continued                                     |                                                                        |                                                                                                                              |                                                                                  |                                                            |                     |
| 601, 631 to 637 640 cont                                 | 7. cont'd                                                              | Selected cohesive fill cont'd                                                                                                | Oxidisable sulphides (OS) content and total potential sulphate (TPS) content (N) | Twice a week or daily when sulphides are expected          | Required            |
|                                                          |                                                                        |                                                                                                                              | pH/chloride ion content (N)                                                      | Weekly                                                     |                     |
|                                                          |                                                                        |                                                                                                                              | Resistivity (N)                                                                  | As required or as a minimum 1 per source at each structure |                     |
|                                                          |                                                                        |                                                                                                                              | Undrained and drained shear parameters (N)                                       | As required or as a minimum 1 per source at each structure |                     |
|                                                          |                                                                        |                                                                                                                              | Permeability (N)                                                                 | As required or as a minimum 1 per source at each structure |                     |
|                                                          | 8.                                                                     | Miscellaneous fill                                                                                                           | mc/MCV (N)                                                                       | Daily                                                      |                     |
|                                                          | 9.                                                                     | Stabilised materials                                                                                                         | Pulverisation                                                                    | 1 per lane width per 200 metre length                      |                     |
|                                                          |                                                                        |                                                                                                                              | mc/MCV (N)                                                                       |                                                            |                     |
|                                                          |                                                                        |                                                                                                                              | Bearing ratio (N)                                                                |                                                            |                     |
|                                                          | Pulverised fuel ash                                                    |                                                                                                                              | Chemical analysis                                                                | 1 per consignment                                          |                     |
| Furnace bottom ash                                       |                                                                        | Grading                                                                                                                      | 1 per 300 tonnes                                                                 |                                                            |                     |
| Fill adjacent to cementitious material or metallic items |                                                                        | Water-soluble sulphate (WS) content, oxidisable sulphides (OS) content and total potential sulphate (TPS) content and pH (N) | 1 per 400 tonnes or per location if less than 400 tonnes                         |                                                            |                     |
| 602                                                      | Earthworks material beneath surface of a road or paved central reserve |                                                                                                                              | Frost heave (N)                                                                  | Required                                                   |                     |
|                                                          | (i) Off site source                                                    |                                                                                                                              |                                                                                  |                                                            | 1 every four months |
|                                                          | (ii) On Site source                                                    |                                                                                                                              |                                                                                  |                                                            | 1 per source        |
| 609 621                                                  | Geotextiles                                                            | Tensile load                                                                                                                 | 1 per 400 square metres                                                          | Required                                                   |                     |
|                                                          |                                                                        | Permeability                                                                                                                 |                                                                                  |                                                            |                     |

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**Appendix 1/5: Testing to be Carried out by the Company**

|  |  |                   |  |  |
|--|--|-------------------|--|--|
|  |  | Pore size         |  |  |
|  |  | Strain at Failure |  |  |



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Appendix 1/5: Testing to be Carried out by the Company

| Clause               | Works, Goods or Material                                     | Test                                                                      | Frequency of Testing                                                                                                    | Test Certificate | Comments                 |                                             |
|----------------------|--------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|------------------|--------------------------|---------------------------------------------|
| Series 600 continued |                                                              |                                                                           |                                                                                                                         |                  |                          |                                             |
| 612                  | Compaction of fills                                          |                                                                           |                                                                                                                         | Required         |                          |                                             |
|                      |                                                              | Method compaction                                                         | Field dry density (N)                                                                                                   |                  |                          | As required                                 |
|                      |                                                              | End product compaction                                                    | Optimum mc (2.5kg/4.5kg rammer/vibrating hammer method) (N)                                                             |                  |                          | Each class or sub class of material         |
|                      |                                                              |                                                                           | Field dry density (N)                                                                                                   |                  |                          | 1 per 400 tonnes                            |
| 614                  | Cement stabilisation to form capping                         | Rate of spread of cement                                                  | 1 per 500 square metres of cement spread                                                                                | Required         |                          |                                             |
| 615<br>641<br>643    | Lime stabilisation to form capping                           | Rate of spread of lime                                                    | 1 per 500 square metres of lime spread                                                                                  | Required         |                          |                                             |
|                      |                                                              | Available lime content                                                    | Each source of lime weekly during stabilisation operation                                                               |                  |                          |                                             |
|                      |                                                              |                                                                           |                                                                                                                         |                  |                          |                                             |
| 622<br>638<br>639    | Earthworks for reinforced soil and anchored earth structures | Redox potential                                                           | 5 locations within the affected area                                                                                    | Required         |                          |                                             |
|                      |                                                              | Drainage layers                                                           | Grading                                                                                                                 |                  |                          | 1 per 400 tonnes                            |
|                      |                                                              |                                                                           | Chemical analysis                                                                                                       |                  |                          |                                             |
|                      |                                                              | Reinforcing elements                                                      | Coeff. of friction                                                                                                      |                  |                          | Each type of element with each type of fill |
| Anchor elements      | Adhesion                                                     |                                                                           |                                                                                                                         |                  |                          |                                             |
| 624                  | Ground anchorages                                            | Proof loading                                                             | As required in Appendix 6/10                                                                                            | Required         |                          |                                             |
| 626                  | Gabions                                                      |                                                                           |                                                                                                                         | Required         |                          |                                             |
|                      |                                                              | Fill                                                                      | Grading                                                                                                                 |                  |                          | 1 per 400 tonnes                            |
|                      |                                                              |                                                                           | 10% fine values (N)                                                                                                     |                  |                          |                                             |
|                      |                                                              | Geomesh                                                                   | As appropriate to properties stated in Appendix 6/10                                                                    |                  |                          | 1 per 400 square metres                     |
| PVC coated wire      |                                                              |                                                                           | Required (ASTM G23)                                                                                                     |                  |                          |                                             |
| 631                  | Subgrade                                                     | LWD tests augmented by independently verified dynamic Plate Bearing Tests | LWD testing 30m centres per lane (offset by 15m between lanes)Dynamic Plate Bearing typically at 100m centres per lane. |                  | Subgrade Surface Modulus |                                             |

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|     |                                                             |                                                                                                            |                                                                                                    |          |                   |
|-----|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----------|-------------------|
|     | Capping or Stabilised Materials                             | Falling Weight Deflectometer Testing (FWD) augmented by independently verified dynamic Plate Bearing Tests | FWD testing at 10m centres per lane Dynamic Plate Bearing tests typically at 50m centres per lane. |          | Stiffness Modulus |
| 642 | Earthworks materials for corrugated steel buried structures | Constrained soil modulus (M*)                                                                              | 3 on each side of each structure                                                                   | Required |                   |

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**Appendix 1/5: Testing to be Carried out by the Company**

| Clause     | Works, Goods or Material                                                    | Test            | Frequency of Testing                                                                                                                                                       | Test Certificate | Comments                                                                                                                                                                                                                                                                                                                                               |
|------------|-----------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Series 700 |                                                                             |                 |                                                                                                                                                                            |                  |                                                                                                                                                                                                                                                                                                                                                        |
| 710        | Constituent materials in recycled aggregate and recycled concrete aggregate | Quality control | Checks are to be carried out by the Company in accordance with the 'Quality Protocol for the production of aggregates from inert waste' and the requirements of Clause 710 | Required         | The quality control procedure should be in accordance with the 'Quality Protocol for the production of aggregates from inert waste' and the @producers compliance checklist' published by Waste and Resources Action Programme (WRAP)<br>The results of all quality control checks shall be delivered promptly to the Contracting Authority on request |
| 711        | Overbanding and inlaid crack sealing systems                                |                 |                                                                                                                                                                            | Required         | BBA certification (or equivalent) applies                                                                                                                                                                                                                                                                                                              |

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**Appendix 1/5: Testing to be Carried out by the Company**

| Series 800 |                                                                                                                              |                                                                                  |                                                          |          |  |
|------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------|----------|--|
| 801        | General requirements for Unbound Mixtures for adjacent to cement bound materials, concrete pavements, structures or products | Water-soluble sulphate (WS) content (N)                                          | 1 per 400 tonnes or per location if less than 400 tonnes | Required |  |
| 803        |                                                                                                                              | Oxidisable sulphides (OS) content and total potential sulphate (TPS) content (N) | 1 per 400 tonnes or per location if less than 400 tonnes |          |  |
| 804        |                                                                                                                              |                                                                                  |                                                          |          |  |
| 805        |                                                                                                                              | Unbound mixtures beneath surface of a road or paved central reserve              | Frost heave (N)                                          |          |  |
| 806        | Grading and fines content                                                                                                    |                                                                                  | 1 per week                                               |          |  |
|            | Plastic index (N)                                                                                                            |                                                                                  |                                                          |          |  |
|            | Resistance to fragmentation (N)                                                                                              |                                                                                  | 6 monthly                                                |          |  |
|            | Resistance to wear micro-Deval test                                                                                          |                                                                                  |                                                          |          |  |
|            | Resistance to freezing and thawing (magnesium sulphate soundness) (N)                                                        |                                                                                  | 1 per source                                             |          |  |
|            | Water absorption (N)                                                                                                         |                                                                                  | As required                                              |          |  |
|            | Volume stability of blast furnace slags                                                                                      |                                                                                  | 6 monthly                                                |          |  |
|            | Volume stability of steel (BOF and EAF) slags                                                                                |                                                                                  | 6 monthly                                                |          |  |
|            | CBR (N)                                                                                                                      |                                                                                  | 1 per source and then monthly                            |          |  |
|            | OMC/mc (N)                                                                                                                   |                                                                                  | As required                                              |          |  |
|            | Density (N)                                                                                                                  |                                                                                  | As required                                              |          |  |
|            | Water absorption (N)                                                                                                         | As required                                                                      |                                                          |          |  |

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**Appendix 1/5: Testing to be Carried out by the Company**

| Clause                                      | Work, Goods or Material                             | Test                                            | Frequency of Testing                         | Test Certificate | Comments                                   |                                       |                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------|-----------------------------------------------------|-------------------------------------------------|----------------------------------------------|------------------|--------------------------------------------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Series 800 (continued)                      |                                                     |                                                 |                                              |                  |                                            |                                       |                                                                                                                                                                                                                                                                                                                        |
| 821, 822, 823, 830, 831, 832, 834, 835, 840 | Cement and other Hydraulically Bound Mixtures (HBM) | Tests for control and checking of HBM           | Tests specified in table 8/14 and Table 8/15 | Required         |                                            |                                       |                                                                                                                                                                                                                                                                                                                        |
|                                             |                                                     | Coefficient of linear expansion                 |                                              |                  |                                            |                                       |                                                                                                                                                                                                                                                                                                                        |
|                                             |                                                     | Tests for laboratory mixture design             | Test specified in Clause 880                 |                  |                                            |                                       |                                                                                                                                                                                                                                                                                                                        |
| Series 900                                  |                                                     |                                                 |                                              |                  |                                            |                                       |                                                                                                                                                                                                                                                                                                                        |
| 901, 925, 937, 938, 943                     | Aggregates for bituminous material                  |                                                 |                                              | Required         | National quality management scheme applies |                                       |                                                                                                                                                                                                                                                                                                                        |
|                                             |                                                     | Resistance to fragmentation (hardness)          | Resistance to fragmentation (N)              |                  | Monthly                                    |                                       |                                                                                                                                                                                                                                                                                                                        |
|                                             |                                                     | Resistance to freezing and thawing (durability) | Soundness (N)                                |                  | 1 per source                               |                                       |                                                                                                                                                                                                                                                                                                                        |
|                                             |                                                     |                                                 | Water absorption (N)                         |                  | As required                                |                                       |                                                                                                                                                                                                                                                                                                                        |
|                                             |                                                     | Cleanliness                                     | Sieve test (mass passing 0.063mm sieve) (N)  |                  | Monthly                                    | Washing and sieving method to be used |                                                                                                                                                                                                                                                                                                                        |
|                                             |                                                     | Shape                                           | Flakiness index (N)                          |                  | Monthly                                    |                                       |                                                                                                                                                                                                                                                                                                                        |
|                                             |                                                     | Blast furnace slag                              | Bulk density (N)                             |                  | 1 per 500 tonnes                           | [BS EN 1097-3]                        |                                                                                                                                                                                                                                                                                                                        |
|                                             |                                                     |                                                 | Soundness (N)                                |                  | Once every 4 months                        |                                       |                                                                                                                                                                                                                                                                                                                        |
|                                             |                                                     |                                                 | Dicalcium silicate disintegration (N)        |                  | 1 per 500 tonnes                           |                                       |                                                                                                                                                                                                                                                                                                                        |
|                                             |                                                     |                                                 | Iron disintegration (N)                      |                  |                                            |                                       |                                                                                                                                                                                                                                                                                                                        |
|                                             |                                                     | Steel slag                                      | Bulk density (N)                             |                  | 1 per 500 tonnes                           |                                       |                                                                                                                                                                                                                                                                                                                        |
|                                             |                                                     |                                                 | Volume stability (N)                         |                  | 1 per 500 tonnes                           |                                       |                                                                                                                                                                                                                                                                                                                        |
|                                             |                                                     | Coarse aggregate for surface courses            | Resistance to polishing (PSV) (N)            |                  | 1 per source                               |                                       |                                                                                                                                                                                                                                                                                                                        |
|                                             |                                                     |                                                 | Resistance to surface abrasion (AAV) (N)     |                  | 1 per source                               |                                       |                                                                                                                                                                                                                                                                                                                        |
|                                             |                                                     | Binders for bituminous materials                | Penetration (N)                              |                  | 1 per 750 tonnes                           | Required                              | National quality management sector schemes apply. Modified binders should have a BBA HAPAS Roads and Bridges Certificate. In the event that no such Certificates have been issued, then in the interim, only modified binders undergoing BBA assessment should be considered for approval by the Contracting Authority |
|                                             |                                                     |                                                 | Softening point (N)                          |                  | 1 per 750 tonnes                           |                                       |                                                                                                                                                                                                                                                                                                                        |

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## Appendix 1/5: Testing to be Carried out by the Company

| Clause                                                                                                    | Work, Goods or Material                                                    | Test                                       | Frequency of Testing           | Test Certificate | Comments                                                  |
|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------|--------------------------------|------------------|-----------------------------------------------------------|
| Series 900 continued                                                                                      |                                                                            |                                            |                                |                  |                                                           |
| 903 to 907,<br>909 to 912,<br>914, 916,<br>925, 926,<br>929, 930,<br>937, 938,<br>941, 943,<br>946 to 948 | Bituminous mixtures                                                        | Grading (N)                                | For Audit Test<br>purpose only |                  | National quality<br>management sector<br>schemes apply    |
|                                                                                                           |                                                                            | Binder Content (N)                         |                                |                  |                                                           |
| 929                                                                                                       | Base and Binder<br>Course Asphalt<br>Concrete (Design<br>Mixtures)         | In situ air void content<br>(N)            | As required                    | Required         |                                                           |
|                                                                                                           |                                                                            | Refusal air void content<br>(N)            |                                |                  |                                                           |
|                                                                                                           |                                                                            | Binder volume (N)                          |                                |                  |                                                           |
|                                                                                                           |                                                                            | Grading (N)                                |                                |                  |                                                           |
|                                                                                                           |                                                                            | Binder content (N)                         |                                |                  |                                                           |
|                                                                                                           |                                                                            | Deformation<br>Resistance                  |                                |                  |                                                           |
|                                                                                                           |                                                                            | Deformation<br>Resistance (Design)         | As required                    | Required         | The test certificate is<br>the CE Mark for the<br>mixture |
| Stiffness (Design)                                                                                        |                                                                            |                                            |                                |                  |                                                           |
| 930                                                                                                       | EME 2                                                                      | In situ air void content<br>(N)            | As required                    | Required         |                                                           |
|                                                                                                           |                                                                            | Binder volume (N)                          |                                |                  |                                                           |
|                                                                                                           |                                                                            | Grading (N)                                |                                |                  |                                                           |
|                                                                                                           |                                                                            | Binder content (N)                         |                                |                  |                                                           |
|                                                                                                           |                                                                            | Richness modulus<br>(design)               | As required                    | Required         | The test certificate is<br>the CE Mark for the<br>mixture |
|                                                                                                           |                                                                            | Duriez (design)                            |                                |                  |                                                           |
|                                                                                                           |                                                                            | Deformation<br>Resistance (Design)         |                                |                  |                                                           |
| Stiffness (Design)                                                                                        |                                                                            |                                            |                                |                  |                                                           |
| 911                                                                                                       | Hot Rolled Asphalt<br>surface course<br>(Design Mixtures)                  | Design Binder content                      | 1 per source                   | Required         | The test certificate is<br>the CE Mark for the<br>mixture |
| 915                                                                                                       | Coated chippings for<br>application to Hot<br>Rolled Asphalt<br>Surfacings | Grading (N)                                | 1 per stockpile                | Required         |                                                           |
|                                                                                                           |                                                                            | Binder content (N)                         | 1 per stockpile                |                  |                                                           |
|                                                                                                           |                                                                            | Flakiness Index (N)                        | 1 per source                   |                  |                                                           |
|                                                                                                           |                                                                            | Resistance to polishing<br>PSV (N)         | 1 per source                   |                  |                                                           |
|                                                                                                           |                                                                            | Resistance to surface<br>abrasion (AAV)(N) | 1 per source                   |                  |                                                           |
|                                                                                                           |                                                                            | Hot sand test (N)                          | 1 per source                   |                  |                                                           |
|                                                                                                           |                                                                            | Rate of spread (N)                         | As required                    |                  | National quality<br>management sector<br>schemes apply    |
| 921                                                                                                       | Surface macrotexture                                                       | Volumetric Patch (N)                       | BS EN 13036-1                  | Required         |                                                           |

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|     |                        |                                    |                                                                            |          |                                                                            |
|-----|------------------------|------------------------------------|----------------------------------------------------------------------------|----------|----------------------------------------------------------------------------|
| 924 | High friction surfaces | Quality control checks             | As required in sub-<br>Clause 924.5                                        | Required | BBA HAPAS Roads<br>and Bridges<br>certification (or<br>equivalent) applies |
|     |                        | System coverage                    | As required in sub-<br>Clause 924.6                                        |          |                                                                            |
|     | Aggregate              | Resistance to polishing<br>PSV (N) | 1 per source and as<br>required for coated<br>chippings in Clause<br>915.3 | Required |                                                                            |

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Appendix 1/5: Testing to be Carried out by the Company

| Clause                          | Work, Goods or Material                                                              | Test                              | Frequency of Testing                                | Test Certificate | Comments                                                                                                                                                                                                                                                              |
|---------------------------------|--------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Series 900 continued            |                                                                                      |                                   |                                                     |                  |                                                                                                                                                                                                                                                                       |
| 937                             | Stone mastic asphalt (SMA) binder course and regulating course                       | In situ air void content (N)      |                                                     | Required         |                                                                                                                                                                                                                                                                       |
|                                 |                                                                                      | Deformation resistance            |                                                     |                  |                                                                                                                                                                                                                                                                       |
|                                 |                                                                                      | Binder drainage test              |                                                     | Required         |                                                                                                                                                                                                                                                                       |
|                                 |                                                                                      | Deformation resistance (design)   |                                                     |                  |                                                                                                                                                                                                                                                                       |
| 938                             | Porous asphalt surface course                                                        |                                   |                                                     |                  | National quality management sector scheme applies                                                                                                                                                                                                                     |
|                                 |                                                                                      | Relative hydraulic conductivity   | In accordance with Clause 938                       |                  |                                                                                                                                                                                                                                                                       |
|                                 |                                                                                      | Modified binder storage stability | In accordance with Clause 941                       |                  | Modified binders should have a BBA HAPAS Roads and Bridges Certificate. In the event that no such Certificates have been issued, then in the interim, only modified binders undergoing BBA assessment should be considered for approval by the Contracting Authority. |
|                                 |                                                                                      | Binder drainage test              | In accordance with BS DD 232 2005                   |                  |                                                                                                                                                                                                                                                                       |
| 942                             | Thin surface course systems                                                          |                                   |                                                     |                  | National quality management sector scheme applies. BBA certification (or equivalent) applies.                                                                                                                                                                         |
|                                 |                                                                                      | Binder drainage test              | In accordance with BS DD 232 2005                   |                  |                                                                                                                                                                                                                                                                       |
| 943                             | Hot Rolled Asphalt surface course and binder course (performance-related design mix) | In situ air void content (N)      | As required                                         | Required         | National quality management sector scheme applies                                                                                                                                                                                                                     |
|                                 |                                                                                      | Deformation resistance            |                                                     |                  |                                                                                                                                                                                                                                                                       |
|                                 |                                                                                      | Grading (N)                       |                                                     |                  |                                                                                                                                                                                                                                                                       |
|                                 |                                                                                      | Binder content (N)                |                                                     |                  |                                                                                                                                                                                                                                                                       |
|                                 |                                                                                      | Density (N)                       |                                                     |                  |                                                                                                                                                                                                                                                                       |
|                                 |                                                                                      | Wheel tracking rate (N)           |                                                     |                  |                                                                                                                                                                                                                                                                       |
|                                 |                                                                                      | Wheel tracking rut depth (N)      |                                                     |                  |                                                                                                                                                                                                                                                                       |
| Deformation resistance (design) | As required                                                                          |                                   | The test certificate is the CE Mark for the mixture |                  |                                                                                                                                                                                                                                                                       |



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| Clause                          | Work, Goods or Material                       | Test       | Frequency of Testing                               | Test Certificate         | Comments               |                                                                                                                                                                                                                                                                       |          |                                                                |
|---------------------------------|-----------------------------------------------|------------|----------------------------------------------------|--------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------------------------------------------------|
| Series 900 (continued)          |                                               |            |                                                    |                          |                        |                                                                                                                                                                                                                                                                       |          |                                                                |
| 918                             | Slurry surfacing incorporating microsurfacing | Binder     |                                                    |                          |                        | Modified binders should have a BBA HAPAS Roads and Bridges Certificate. In the event that no such Certificates have been issued, then in the interim, only modified binders undergoing BBA assessment should be considered for approval by the Contracting Authority. |          |                                                                |
|                                 |                                               |            | Product identification                             | Per product per source   | Required               | Tests are expected to be repeated every two years                                                                                                                                                                                                                     |          |                                                                |
|                                 |                                               |            | Vialit cohesion                                    | Per product per source   | Required               | Tests are expected to be repeated every two years                                                                                                                                                                                                                     |          |                                                                |
|                                 |                                               |            | Rate of spread                                     | For each machine         | Required               | Not more than 6 weeks prior to start of work                                                                                                                                                                                                                          |          |                                                                |
|                                 |                                               |            | Penetration at 25°C and 5°C (N)                    | Every manufactured batch |                        | Manufacturer's QA test results may be submitted                                                                                                                                                                                                                       |          |                                                                |
|                                 |                                               | Aggregates | Flakiness index (N)                                | 1 per source             | Required               |                                                                                                                                                                                                                                                                       |          |                                                                |
|                                 |                                               |            | Resistance to polishing (PSV) (N)                  | Source approval          | Required               |                                                                                                                                                                                                                                                                       |          |                                                                |
|                                 |                                               |            | Resistance to surface abrasion (AAV) (N)           | Source approval          | Required               |                                                                                                                                                                                                                                                                       |          |                                                                |
|                                 |                                               |            | Grading (N)                                        | 1 per 200 tonnes         | Required               |                                                                                                                                                                                                                                                                       |          |                                                                |
|                                 |                                               | System     | TAIT or BBA/HAPAS                                  |                          | Required               |                                                                                                                                                                                                                                                                       |          |                                                                |
|                                 |                                               | 920        | Bond coats, tack coats and other bituminous sprays | Binder                   | Product identification | 1 per product per source                                                                                                                                                                                                                                              | Required | Tests are expected to be repeated every two years              |
|                                 |                                               |            |                                                    |                          | Vialit cohesion        | 1 per product per source                                                                                                                                                                                                                                              | Required | Tests are expected to be repeated every two years              |
|                                 |                                               |            |                                                    |                          | Accuracy of spread     | 1 for each binder and sprayer per month                                                                                                                                                                                                                               | Required | Not more than 6 weeks prior to start of work and one per month |
| Rate of spread                  | 1 per week                                    |            |                                                    |                          |                        |                                                                                                                                                                                                                                                                       |          |                                                                |
| Penetration at 25°C and 5°C (N) | Every manufactured batch                      |            |                                                    |                          |                        | Manufacturer's QA test results may be submitted                                                                                                                                                                                                                       |          |                                                                |
|                                 |                                               |            |                                                    |                          |                        |                                                                                                                                                                                                                                                                       |          |                                                                |

| Clause | Work, Goods or Material | Test | Frequency of Testing | Test Certificate | Comments |
|--------|-------------------------|------|----------------------|------------------|----------|
|--------|-------------------------|------|----------------------|------------------|----------|

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| Series 900 (continued) |                  |                                   |                                                                          |          |                                                                                                                                                                                                                                                                       |
|------------------------|------------------|-----------------------------------|--------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 919<br>922             | Surface Dressing |                                   |                                                                          |          | National management scheme applies quality sector                                                                                                                                                                                                                     |
|                        | Binder           |                                   |                                                                          |          | Modified binders should have a BBA HAPAS Roads and Bridges Certificate. In the event that no such Certificates have been issued, then in the interim, only modified binders undergoing BBA assessment should be considered for approval by the Contracting Authority. |
|                        |                  | Product identification            | 1 per product per source                                                 | Required | Tests are expected to be repeated every two years                                                                                                                                                                                                                     |
|                        |                  | Vialit cohesion (N)               | 1 per product per source                                                 | Required | Tests are expected to be repeated every two years                                                                                                                                                                                                                     |
|                        |                  | Accuracy of spread                | 1 for each binder and sprayer per week                                   | Required | Not more than 6 weeks prior to start of work and one per week                                                                                                                                                                                                         |
|                        |                  | Rate of spread                    | Every 1000 linear metres initially                                       | Required | Frequency to be reduced to daily after 3 satisfactory results, but not less than 1 test per site                                                                                                                                                                      |
|                        |                  | Penetration at 25°C and 5°C (N)   | Every batch                                                              |          | For cut back binders as supplied, manufacturer's QA viscosity test results may be submitted                                                                                                                                                                           |
|                        | Chippings        | Resistance to (PSV) polishing (N) | Source approval                                                          | Required | Less than 6 months prior to work                                                                                                                                                                                                                                      |
|                        |                  | Resistance to abrasion (AAV) (N)  | Source approval                                                          | Required | Less than 6 months prior to work                                                                                                                                                                                                                                      |
|                        |                  | Grading (N)                       | 1 per 200 tonnes                                                         | Required |                                                                                                                                                                                                                                                                       |
|                        |                  | Binder content (N)                | 1 per 200 tonnes                                                         | Required | Coated chippings only                                                                                                                                                                                                                                                 |
|                        |                  | Flakiness index (N)               | 1 per 200 tonnes                                                         | Required |                                                                                                                                                                                                                                                                       |
|                        |                  | Accuracy of spread (N)            | 1 for each chipping spreader for every change of chipping size or source | Required | Initial test not more than 6 weeks prior to start of work                                                                                                                                                                                                             |
|                        |                  | Rate of spread                    | Every 500 linear metres initially                                        |          | Frequency to be reduced to daily after 3 satisfactory results, but not less than 1 test per lane per site                                                                                                                                                             |
|                        | System           | TAIT or BBA/HAPAS                 |                                                                          | Required |                                                                                                                                                                                                                                                                       |
|                        | Rollers          | Spray bars working                | Before work starts and daily during works                                |          |                                                                                                                                                                                                                                                                       |

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| Clause                               | Work, Goods or Material                                               | Test         | Frequency of Testing | Test Certificate                                                                               | Comments                                                           |                   |
|--------------------------------------|-----------------------------------------------------------------------|--------------|----------------------|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-------------------|
| Series 900 (continued)               |                                                                       |              |                      |                                                                                                |                                                                    |                   |
| 950                                  | Depressions                                                           |              |                      |                                                                                                | BBA HAPAS Roads and Bridges Certification (or equivalent) applies. |                   |
| Series 1000                          |                                                                       |              |                      |                                                                                                |                                                                    |                   |
| 1001                                 | Cement                                                                |              |                      | Required                                                                                       | Quality management and product certification schemes apply         |                   |
| 1030                                 |                                                                       |              |                      |                                                                                                |                                                                    |                   |
| 1044                                 |                                                                       |              |                      | Portland cement CEM I                                                                          | Tests and test certificates are required                           |                   |
|                                      |                                                                       |              |                      | Portland blastfurnace cement                                                                   |                                                                    |                   |
|                                      |                                                                       |              |                      | Blastfurnace cement CEM III/A                                                                  |                                                                    |                   |
|                                      |                                                                       |              |                      | Portland PFA cement CEM II/B-V                                                                 |                                                                    |                   |
|                                      |                                                                       |              |                      | Pozzolan cement CEM IV/A                                                                       |                                                                    | Required (BS6610) |
|                                      |                                                                       |              |                      | Portland cement with microsilica                                                               |                                                                    | Required          |
| Pulverised - fuel ash                |                                                                       |              |                      | Tests and test certificates are required. Product certification schemes apply to pfa and slag. |                                                                    |                   |
| Ground granulated blast furnace slag |                                                                       |              |                      |                                                                                                |                                                                    |                   |
| Admixtures                           |                                                                       |              |                      |                                                                                                |                                                                    |                   |
| Mixing water                         | Sulphate content (N)                                                  | Monthly      |                      |                                                                                                |                                                                    |                   |
| Aggregates                           | Resistance to freezing and thawing - magnesium sulphate soundness (N) | 1 per source | Required             |                                                                                                |                                                                    |                   |
|                                      | Water absorption (N)                                                  | As required  |                      |                                                                                                |                                                                    |                   |

Part 4: Specification

**Appendix 1/5: Testing to be Carried out by the Company**

| Clause                         | Work, Goods or Material                        | Test                                                          | Frequency of Testing                                           | Test Certificate          | Comments                       |
|--------------------------------|------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------|---------------------------|--------------------------------|
| Series 1000 (continued)        |                                                |                                                               |                                                                |                           |                                |
| 1001<br>1030<br>1044<br>cont'd | Aggregates cont'd                              | Flakiness index (N)                                           | Monthly                                                        | Required                  |                                |
|                                |                                                | Shell content (N)                                             | 1 per source                                                   |                           |                                |
|                                |                                                | Resistance to fragmentation (N)                               | 6 monthly                                                      |                           |                                |
|                                |                                                | Resistance to polishing (PSV) (N)                             | 1 per source                                                   |                           |                                |
|                                |                                                | Resistance to abrasion (AAV) (N)                              | 1 per source                                                   |                           |                                |
|                                |                                                | Grading and fines content (N)                                 | 1 per week as per source                                       |                           |                                |
|                                |                                                | Chloride content (N)                                          | Weekly or as otherwise agreed (1 per source for CBM Aggregate) |                           |                                |
|                                |                                                | Total sulphur (TS) and acid-soluble sulphate (AS) content (N) | Every 6 months                                                 |                           |                                |
|                                | Flint coarse aggregate containing white flints | Water absorption (N)                                          | 3 per source thereafter weekly                                 | Required                  |                                |
|                                | Sand (i.e. Fine aggregate)                     | Acid-soluble material (N)                                     | Monthly                                                        |                           | Not required for CBM aggregate |
|                                | Blastfurnace slag                              | Bulk density (N)                                              | Every 6 months                                                 |                           |                                |
|                                |                                                | Dicalcium silicate disintegration (N)                         | Every 6 months                                                 |                           |                                |
|                                |                                                | Iron disintegration (N)                                       | Every 6 months                                                 |                           |                                |
|                                |                                                | Total sulphur (TS) and acid-soluble sulphate (AS) content (N) | Every 6 months                                                 |                           |                                |
|                                | Pulverised-fuel ash                            |                                                               |                                                                | Required (BS3892: Part 2) |                                |

Part 4: Specification

**Appendix 1/5: Testing to be Carried out by the Company**

| Clause                       | Work, Goods or Material           | Test                                             | Frequency of Testing       | Test Certificate                                                                             | Comments                             |
|------------------------------|-----------------------------------|--------------------------------------------------|----------------------------|----------------------------------------------------------------------------------------------|--------------------------------------|
| Series 1000 continued        |                                   |                                                  |                            |                                                                                              |                                      |
| 1002<br>1003<br>1004<br>1044 | Pavement Concrete                 | Air content test (N)                             | As required in Table 10/10 | Required                                                                                     | Product certification scheme applies |
|                              |                                   | Density (N)                                      | As required in Table 10/10 |                                                                                              |                                      |
|                              |                                   | Strength (N)                                     | As required in Table 10/10 |                                                                                              |                                      |
| 1005                         | Consistence (Workability)         | Degree of Compact-ability (Compaction Index) (N) | As required in Table 10/10 | Required                                                                                     |                                      |
|                              |                                   | Vebe (N)                                         |                            |                                                                                              |                                      |
|                              |                                   | Slump[ (N)                                       |                            |                                                                                              |                                      |
| 1011<br>1012                 | Dowel bars<br>Tie bars            |                                                  |                            | Required (BS4449)                                                                            | Product certification scheme applies |
|                              | Dowel bars and supporting cradles | Load test                                        | 1 per arrangement          |                                                                                              |                                      |
|                              | Sheathed dowel bars               | Bond stress                                      | 4 bars                     |                                                                                              |                                      |
|                              | Cranked tie bars (coated)         | Bend test                                        | 4 bars                     |                                                                                              |                                      |
|                              |                                   | Salt fog cabinet                                 | 4 bars                     |                                                                                              |                                      |
| 1015                         | Joint filler board                | Weathering test                                  | 3 per source               | Required                                                                                     | Normally undertaken by manufacturer  |
|                              |                                   | Compression and recovery                         | 4 per source               |                                                                                              |                                      |
|                              |                                   | Extrusion                                        | 1 per source               |                                                                                              |                                      |
|                              | Cork filler board                 | Immersion in water                               | 2 per source               |                                                                                              |                                      |
|                              |                                   | Immersion in acid                                | 2 per source               |                                                                                              |                                      |
| 1016<br>1017                 | Applied sealants                  | Initial Penetration                              | 1 per 1000 m or 1 per day  | Required (BS EN14188-1, BS 2499-2, BS5212-1, BS5212-2) (BSEN13880-2, BSEN13880-3 and BS4254) |                                      |
|                              |                                   | Resilience                                       | 1 per 1000 m or 1 per day  |                                                                                              |                                      |

## Part 4: Specification

## Appendix 1/5: Testing to be Carried out by the Company

| Clause                | Work, Goods or Material                                 | Test                                           | Frequency of Testing                                     | Test Certificate                                                                                                              | Comments |
|-----------------------|---------------------------------------------------------|------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|----------|
| Series 1000 continued |                                                         |                                                |                                                          |                                                                                                                               |          |
| 1016<br>1017<br>cont. | Compression seals                                       |                                                |                                                          | Required (ASTM D2628) (BS2752)(BS 4443:Part 4) Method 10 and BS EN ISO 2440) (BS EN ISO 1856) (BS903: Part A16 or BS IS) 1817 |          |
|                       |                                                         | Compression set                                | 1 per type of seal                                       |                                                                                                                               |          |
|                       |                                                         | Immersion in oil                               | 1 per type of seal                                       |                                                                                                                               |          |
|                       | Self expanding cork seal                                | Tests specified in Clause 1017                 | 1 per type of seal                                       | Required                                                                                                                      |          |
| 1026<br>1044          | Surface macrotexture                                    | BS EN 13036 - 1 Volumetric Patch Technique (N) | 1 per day (set of 10)                                    | Required                                                                                                                      |          |
| 1027                  | Aluminised curing compound                              | Efficiency index                               | 1 per source                                             | Required                                                                                                                      |          |
| 1030                  | Wet lean concrete                                       | Density                                        | As required in Table 10/9                                | Required                                                                                                                      |          |
|                       |                                                         | Cube strength (N)                              |                                                          |                                                                                                                               |          |
| 1043                  | Foamed Concrete                                         | Cube strength (N)                              | 2 cubes per 12m <sup>3</sup>                             | Required                                                                                                                      |          |
| Series 1100           |                                                         |                                                |                                                          |                                                                                                                               |          |
| 1101                  | Precast concrete kerbs, channels, edgings and quadrants | Bending Strength                               | Minimum of 8 per 1000 units of each product (BS EN 1340) | Required                                                                                                                      |          |
| 1102                  | In situ asphalt kerbs                                   | Grading                                        | 1 test per 500 metres laid                               | Required                                                                                                                      |          |
|                       |                                                         | Binder content                                 |                                                          |                                                                                                                               |          |

Part 4: Specification

**Appendix 1/5: Testing to be Carried out by the Company**

| Clause                | Work, Goods or Material                                          | Test                          | Frequency of Testing                                              | Test Certificate                                      | Comments                                                                                                                                         |
|-----------------------|------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Series 1100 continued |                                                                  |                               |                                                                   |                                                       |                                                                                                                                                  |
| 1104                  | Precast concrete flags                                           | Bending strength              | Minimum of 8 per 1000 m <sup>2</sup> of each product (BS EN 1339) | Required                                              |                                                                                                                                                  |
|                       |                                                                  |                               |                                                                   |                                                       |                                                                                                                                                  |
|                       | Bedding                                                          | Granular material             |                                                                   |                                                       |                                                                                                                                                  |
|                       |                                                                  | Mortar                        |                                                                   |                                                       |                                                                                                                                                  |
| 1107                  | Concrete block paving                                            | Compressive strength          | Minimum of 8 per 1000 m <sup>2</sup> of each product (BS EN 1338) | Required                                              |                                                                                                                                                  |
| 1108                  | Clay pavers                                                      | Bending strength              | Minimum of 8 per 1000 m <sup>2</sup> of each product (BS EN 1344) | Required                                              |                                                                                                                                                  |
|                       |                                                                  | Skid resistance               | Minimum of 8 per 1000 m <sup>2</sup> of each product (BS EN 1344) |                                                       |                                                                                                                                                  |
| Series 1200           |                                                                  |                               |                                                                   |                                                       |                                                                                                                                                  |
| 1202                  | Permanent traffic signs                                          |                               |                                                                   | Required                                              | Quality management scheme applies.<br><br>Certification that the traffic sign is capable of passing the tests in BS 873: Part 1 is required.     |
| 1207                  | Anchorage in drilled holes to supports of traffic signs          | Loading test on site          |                                                                   |                                                       |                                                                                                                                                  |
| 1210                  | Holding down bolts and anchorages to bases of permanent bollards |                               |                                                                   | Required                                              | Certification that the holding down bolts and anchorages are capable of complying with the performance requirements of BS873:Part 3 is required. |
| 1212                  | Road Markings                                                    | Tests specified in BS EN 1824 |                                                                   | Required                                              | National quality management sector scheme applies. Procedures are given in BS EN 1824                                                            |
|                       |                                                                  | Glass Heads                   | Arsenic trioxide content, Lead content and Antimony content (N)   | One per contract and/or per specific source of supply | Required                                                                                                                                         |

Part 4: Specification

**Appendix 1/5: Testing to be Carried out by the Company**

| Clause                                  | Work, Goods or Material                                 | Test                                                         | Frequency of Testing                                                 | Test Certificate | Comments                                                                                                                                                                                              |
|-----------------------------------------|---------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Series 1200 continued                   |                                                         |                                                              |                                                                      |                  |                                                                                                                                                                                                       |
| 1214                                    | Permanent traffic cones and traffic cylinders           |                                                              |                                                                      | Required         | Certification that permanent traffic cones and cylinders have been tested and comply with BS873:Part 8 is required                                                                                    |
|                                         |                                                         | Test specified in BS873:Part 8                               | 2 of each size and category/ty pe                                    |                  |                                                                                                                                                                                                       |
|                                         | Flat traffic delineators                                |                                                              |                                                                      | Required         | Certification that the FTD's have been tested and comply with Clause 1214 is required                                                                                                                 |
|                                         |                                                         | Test specified in Clause 1214                                | As required                                                          |                  |                                                                                                                                                                                                       |
|                                         | Other traffic delineators                               |                                                              |                                                                      | Required         | Certification that the delineators have been tested and comply with Clause 1214 is required.                                                                                                          |
|                                         |                                                         | Test specified in Appendix 12/4                              | As required                                                          |                  |                                                                                                                                                                                                       |
|                                         | Temporary cones, cylinders, FTD's and other delineators |                                                              |                                                                      | Required         | Certification that at least 1 in 500 of any batch of cones, cylinders, FTD's and other delineators to be used in the Temporary Works have passed the tests in Clause 1214 as appropriate is required. |
|                                         | 1217                                                    | Traffic signals                                              |                                                                      |                  |                                                                                                                                                                                                       |
| Cables                                  |                                                         |                                                              |                                                                      |                  | Product certification scheme applies                                                                                                                                                                  |
| Controllers<br><i>[Other equipment]</i> |                                                         | Test specified in Appendix 12/5                              | Each controller before delivery to Site and again after installation |                  |                                                                                                                                                                                                       |
| Cabling                                 |                                                         | Tests a, b, c, e, f, g, h, j as defined in sub-Clause 1424.2 | Each traffic signals installation                                    | Required         | Certification that the installation complies with BS7671 (the IEE Wiring Regulations) is required                                                                                                     |



Part 4: Specification

**Appendix 1/5: Testing to be Carried out by the Company**

| Clause                | Work, Goods or Material                                            | Test                                                     | Frequency of Testing                     | Test Certificate | Comments                                                                            |
|-----------------------|--------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------|------------------|-------------------------------------------------------------------------------------|
| Series 1200 continued |                                                                    |                                                          |                                          |                  |                                                                                     |
| 1218                  | Detector loops                                                     |                                                          |                                          |                  |                                                                                     |
|                       | Cable                                                              |                                                          |                                          | Required         | Certification that completed cables comply with specification TR 2029 is required   |
|                       | Epoxy resin                                                        |                                                          |                                          | Required         | Certification that the epoxy resin complies with specification MCH 1540 is required |
|                       | Feeder cable                                                       |                                                          |                                          | Required         | Certification that completed cables comply with specification TR 2031 is required.  |
|                       | Joints                                                             | Pull test (4 kgf)                                        | Each crimp                               |                  |                                                                                     |
|                       | Installation                                                       | Series resistance<br>Insulation resistance<br>Inductance | Each loop                                | Required         | Certification in accordance with specification MCH 1540 is required                 |
| Series 1300           |                                                                    |                                                          |                                          |                  |                                                                                     |
| 1305                  | Anchorage for use in drilled holes                                 | Tensile load (Manufacturer's tests)                      |                                          | Required         | To provide well attested and documented evidence                                    |
| 1306                  | Anchorage in drilled holes to columns and masts with flange plates | Loading test on site                                     | As required                              |                  |                                                                                     |
| 1310                  | Welding                                                            | Welding procedures (Manufacturer's tests)                | (Every seven years)                      |                  | Quality management scheme applies                                                   |
|                       |                                                                    | Welder qualification (Manufacturer's tests)              | (Sub-clauses 1310.1 and 1310.2 (7.1.3.)) |                  | Quality management scheme applies                                                   |
|                       |                                                                    | Production testing (Manufacturer's tests)                | (Sub-Clauses 1310.1 and 1310.2 (7.1.4))  |                  |                                                                                     |
|                       | Welded joints                                                      | Destructive testing                                      | (Sub-Clause 1310.1 and 1310.2 (7.1.5))   |                  |                                                                                     |
| 1313                  | GFRP laminates                                                     | Loss of ignition                                         | 1 per 50 production columns              |                  |                                                                                     |
|                       |                                                                    | Colour fastness                                          | 1 per batch                              |                  |                                                                                     |
|                       |                                                                    | Electric strength                                        |                                          |                  |                                                                                     |

## Part 4: Specification

## Appendix 1/5: Testing to be Carried out by the Company

| Clause                | Work, Goods or Material                      | Test                           | Frequency of Testing  | Test Certificate | Comments                                                                                                                                   |             |
|-----------------------|----------------------------------------------|--------------------------------|-----------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| Series 1300 continued |                                              |                                |                       |                  |                                                                                                                                            |             |
| 1313 cont.            | GFRP laminates cont'd                        | Water absorption               | 1 per batch           |                  |                                                                                                                                            |             |
|                       |                                              | Impact strength                |                       |                  |                                                                                                                                            |             |
| 1314                  | Brackets for laminated GFRP lighting columns |                                |                       | Required         |                                                                                                                                            |             |
|                       |                                              | Polyurethane foam              | Bulk density          |                  |                                                                                                                                            | 1 per batch |
|                       |                                              |                                | Surface hardness      |                  |                                                                                                                                            |             |
|                       |                                              |                                | Apparent bulk density |                  |                                                                                                                                            | 2 per batch |
|                       |                                              |                                | Impact strength       |                  |                                                                                                                                            |             |
| Flexural stress       |                                              |                                |                       |                  |                                                                                                                                            |             |
| Series 1400           |                                              |                                |                       |                  |                                                                                                                                            |             |
| 1421                  | Cable                                        |                                |                       |                  | Product certification scheme applies                                                                                                       |             |
| 1424                  | Lighting Units                               | Tests specified in Clause 1424 | Each unit             | Required         | Product certification scheme applies<br>Certification that the installation complies with BS7671 (the IEE Wiring Regulations) is required. |             |
|                       | Networks                                     | Test specified in Clause 1424  | Each network          | Required         | Certification that the installation complies with BS 7671 (the IEE Wiring Regulations) is required                                         |             |
| Series 1500           |                                              |                                |                       |                  |                                                                                                                                            |             |
| 1506                  | Copper communications cable                  |                                |                       | Required         | Certification that each completed cable complies with specification TR2150 or TR 2158, as appropriate, is required                         |             |
|                       | Optical fibre communications cable           |                                |                       | Required         | Certification that each completed cable complies with specification TR2151 or TR 2159, as appropriate, is required                         |             |
|                       | Coaxial communications cable                 |                                |                       |                  | Certification that each completed cable complies with specification TR2152 or TR 2160, as appropriate, is required                         |             |
|                       | Energy cable                                 |                                |                       | Required         | Certification that each completed cable complies with specification TR2153 or TR 2161, as appropriate, is required                         |             |

## Part 4: Specification

## Appendix 1/5: Testing to be Carried out by the Company

| Clause                           | Works, Goods or Material                                                                                   | Test                                                                  | Frequency of Testing                                        | Test Certificate   | Comments                                                                                          |
|----------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|-------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------|
| Series 1500 continued            |                                                                                                            |                                                                       |                                                             |                    |                                                                                                   |
| 1513                             | Cable joint enclosures                                                                                     | Test specified in Clause 1513.12                                      | Each CJE                                                    | Required           | Certification that CJE satisfies the air pressure test is required                                |
| 1518                             | Coaxial and copper Communications and power cable                                                          | Tests specified in specification MCG 1022 or MCG 1099, as appropriate | Each cable (Stage 1) As required in Appendix 15/1 (Stage 2) |                    | Results to be reported in accordance with MCG 1022 or MCG 1099, as appropriate                    |
|                                  | Optical fibre communications cable                                                                         | Tests specified in specification MCG 1055 or MCG 1099, as appropriate | Each cable (Stage 1) As required in Appendix 15/1 (Stage 2) |                    | Results to be reported in accordance with MCG 1055 or MCG 1099, as appropriate                    |
| 1522                             | Motorway System                                                                                            |                                                                       |                                                             |                    |                                                                                                   |
|                                  | Steel posts                                                                                                |                                                                       |                                                             | Required (BS 6323) |                                                                                                   |
| 1526                             | Electrical installations                                                                                   | Tests specified in BS 7671                                            | Each installation                                           | Required           | Certification that the installation complies with BS7671 (the IEE Wiring Regulations) is required |
| 1530                             | Cable ducts                                                                                                | Tests specified in BS EN 50086-1, 2 and 4                             | Each supplier                                               | Required           | Current British Board of Agrément Certificate is required                                         |
| 1533                             | Cable ducts                                                                                                |                                                                       |                                                             |                    |                                                                                                   |
|                                  | Mandrel test                                                                                               | Tests specified in Clause 1533                                        | Each duct                                                   | Required           | Certificate that each length of duct between chambers satisfies the mandrel test is required      |
|                                  | Air test                                                                                                   | Tests specified in Clause 1533                                        | Each duct                                                   | Required           | Certificate that each length of duct between chambers satisfies the air test is required          |
| Series 1600                      |                                                                                                            |                                                                       |                                                             |                    |                                                                                                   |
| 1601                             | Soil samples<br>In situ soil tests                                                                         |                                                                       |                                                             | Required           |                                                                                                   |
| 1602 to 1606<br><br>1610 to 1615 | Concrete<br>Grout<br>Reinforcement<br>Prestressing<br>Steelwork<br>Welding<br>Protection against corrosion |                                                                       |                                                             | Required           |                                                                                                   |
| 1606                             | Coatings for protection against corrosion                                                                  | Adhesion                                                              | As required in Appendix 16/6                                |                    |                                                                                                   |

## Part 4: Specification

## Appendix 1/5: Testing to be Carried out by the Company

| Clause                | Work, Goods or Material                     | Test                            | Frequency of Testing                | Test Certificate | Comments                                                                                                                                                                                     |
|-----------------------|---------------------------------------------|---------------------------------|-------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Series 1600 continued |                                             |                                 |                                     |                  |                                                                                                                                                                                              |
| 1607                  | Reduction of friction on piles              |                                 |                                     |                  |                                                                                                                                                                                              |
| 1608                  | Integrity testing                           |                                 |                                     |                  |                                                                                                                                                                                              |
| 1616                  | Dynamic testing                             |                                 |                                     |                  |                                                                                                                                                                                              |
| 1609                  | Static load testing of piles                |                                 |                                     | Required         |                                                                                                                                                                                              |
| 1612                  | Self hardening slurry mixes                 |                                 |                                     | Required         |                                                                                                                                                                                              |
| 1617                  | Instrumentation                             |                                 |                                     | Required         |                                                                                                                                                                                              |
| 1618                  | Support fluids                              | To be proposed by the Company   |                                     |                  | See Appendix 16/18                                                                                                                                                                           |
| Series 1700           |                                             |                                 |                                     |                  |                                                                                                                                                                                              |
| 1702<br>1704          | Cement types as stated in sub-Clause 1702.1 |                                 |                                     | Required         | Certificate to be provided monthly for each type of cement.<br><br>Quality management and product certification schemes apply.                                                               |
|                       | Cements (all types)                         | Chloride content                | Monthly                             |                  | Tests to be carried out by the manufacturer and results included on the test certificates required above                                                                                     |
|                       | Pulverised-fuel ash                         | Sulphate content                | Monthly                             |                  |                                                                                                                                                                                              |
|                       | Ground granulated blast furnace slag        | Acid-soluble alkali content     | Daily (PC)<br>Weekly (pfa<br>ggbfs) |                  |                                                                                                                                                                                              |
|                       | Aggregates                                  | Grading and fines content       | 1 per delivery (per source)         |                  | Results of routine control tests from the factory production control system operated by the producer to be provided - see Annex H of BS EN 12620<br><br>Product certification scheme applies |
|                       |                                             | Shell content (N)               | Monthly                             |                  |                                                                                                                                                                                              |
|                       |                                             | Flakiness index (N)             | Monthly                             |                  |                                                                                                                                                                                              |
|                       |                                             | Resistance to fragmentation (N) | Monthly                             |                  |                                                                                                                                                                                              |
|                       |                                             | Drying shrinkage (N)            | 1 per 5 years                       |                  |                                                                                                                                                                                              |
|                       |                                             | Chloride content (N)            | 1 per week or as otherwise agreed   |                  |                                                                                                                                                                                              |
|                       |                                             | Sulphate Content (N)            | Yearly                              |                  |                                                                                                                                                                                              |
|                       |                                             | Blastfurnace slag               | Bulk density (N)                    | Every 6 months   |                                                                                                                                                                                              |
|                       | Stability (N)                               |                                 | Every 6 months                      |                  |                                                                                                                                                                                              |
|                       | Sulphur content (N)                         |                                 | Every 6 months                      |                  |                                                                                                                                                                                              |
|                       | Water                                       | Tests specified in BS EN 1008   | As required                         |                  |                                                                                                                                                                                              |

Part 4: Specification

**Appendix 1/5: Testing to be Carried out by the Company**

| Clause            | Work Goods or Material | Test                                                               | Frequency of Testing                                                                                       | Test Certificate       | Comments                                                                                          |             |          |
|-------------------|------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------|---------------------------------------------------------------------------------------------------|-------------|----------|
| 1700 continued    |                        |                                                                    |                                                                                                            |                        |                                                                                                   |             |          |
| 1702<br>1704 cont | Water cont             | Chloride content                                                   | Monthly                                                                                                    |                        |                                                                                                   |             |          |
|                   |                        | Sulphate content                                                   | Monthly                                                                                                    |                        |                                                                                                   |             |          |
|                   |                        | Acid-soluble alkali content                                        | Weekly                                                                                                     |                        |                                                                                                   |             |          |
|                   | Admixtures             | Chloride Content                                                   | 1 per consignment                                                                                          | Required (BS EN-934-2) |                                                                                                   |             |          |
|                   |                        | Sulphate content                                                   | 1 per consignment                                                                                          | Required               |                                                                                                   |             |          |
|                   |                        | Acid-soluble alkali content                                        | 1 per consignment                                                                                          |                        |                                                                                                   |             |          |
| 1707              | Concrete               | Cube strength (N)                                                  | Pre stressed concrete two cubes from 12 m <sup>3</sup> or 2 batches whichever represents the lesser volume | Required               | Company to cast and test sufficient additional cubes to demonstrate cube strength before transfer |             |          |
|                   |                        |                                                                    | Reinforced concrete two cubes from 24 m <sup>3</sup> or 4 batches whichever represents the lesser volume   |                        |                                                                                                   |             |          |
|                   |                        |                                                                    | Mass concrete - two cubes from 50 m <sup>3</sup> or 50 batches whichever represents the lesser volume      |                        |                                                                                                   |             |          |
|                   |                        |                                                                    | Additional cubes for special purposes                                                                      |                        |                                                                                                   |             |          |
|                   |                        | Cube strength - identity testing as described in Appendix 17/4 (N) | 2 cubes from each of 2 samples of each batch                                                               |                        |                                                                                                   |             |          |
|                   |                        | Density                                                            | As required                                                                                                |                        |                                                                                                   |             |          |
|                   |                        | Modus of elasticity                                                |                                                                                                            |                        |                                                                                                   |             |          |
|                   |                        | Fresh concrete                                                     | Consistence (slump or compacting factor or Vebe) (N)                                                       |                        |                                                                                                   | Each batch  | Required |
|                   |                        |                                                                    | Air content                                                                                                |                        |                                                                                                   | Each batch  |          |
|                   |                        |                                                                    | Cement content                                                                                             |                        |                                                                                                   | As required |          |
|                   | Water/cement ratio     |                                                                    |                                                                                                            |                        |                                                                                                   |             |          |

## Part 4: Specification

## Appendix 1/5: Testing to be Carried out by the Company

| Clause                  | Work, Goods or Material                                         | Test                                              | Frequency of Testing | Test Certificate           | Comments                                                                                                                                                                                                     |
|-------------------------|-----------------------------------------------------------------|---------------------------------------------------|----------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Series 1700 (continued) |                                                                 |                                                   |                      |                            |                                                                                                                                                                                                              |
| 1709                    | Silane                                                          |                                                   |                      | Required for each delivery | Certification that the silane complies with Clause 1709 is required                                                                                                                                          |
|                         |                                                                 | Refractive Index                                  | Three samples        |                            |                                                                                                                                                                                                              |
|                         |                                                                 | Trial panels, where required in the Contract      |                      |                            |                                                                                                                                                                                                              |
| 1710                    | Concrete packing<br>Mortar packing<br>Epoxy resin bonding agent |                                                   |                      |                            |                                                                                                                                                                                                              |
|                         | Precast concrete manufactured off Site                          | Cube strength (Manufacturer's tests)              |                      |                            | Company to make available records of tests by the manufacturer                                                                                                                                               |
| 1711                    | Grouting and Duct Systems for Post-tensioned tendons            |                                                   |                      |                            | CARES Scheme for supply and installation of Post-tensioned Systems In Concrete Structures or an equivalent scheme is required.<br><br>Quality management and product certification schemes for cement apply. |
|                         |                                                                 | Full scale trials, where required in the Contract |                      |                            | See sub-clause 1711.1 and Appendix 17/6                                                                                                                                                                      |
|                         |                                                                 | Air pressure tests                                |                      |                            | See sub-clause 1711.3 and Appendix 17/6                                                                                                                                                                      |

Part 4: Specification

**Appendix 1/5: Testing to be Carried out by the Company**

| Clause                  | Work, Goods or Material                                            | Test                                                                     | Frequency of Testing | Test Certificate                     | Comments                                                                                                                                                                                                                      |
|-------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Series 1700 (continued) |                                                                    |                                                                          |                      |                                      |                                                                                                                                                                                                                               |
| 1711<br>cont'd          | Grouting and Duct Systems for Post-tensioned tendons<br><br>cont'd | Duct assembly verification tests                                         | See Table 17/4       | Required                             | See sub-clause 1711.3 and Appendix 17/6                                                                                                                                                                                       |
|                         |                                                                    | Wall thickness of ducts after tensioning                                 |                      |                                      | See sub-clause 1711.3 and Appendix 17/6.<br>Company should provide evidence of testing                                                                                                                                        |
|                         |                                                                    | Fluidity                                                                 |                      |                                      | See sub-clause 1711.8 and sub-clause 1711.9 and Table 17/5                                                                                                                                                                    |
|                         |                                                                    | Bleeding                                                                 |                      |                                      |                                                                                                                                                                                                                               |
|                         |                                                                    | Volume change                                                            |                      |                                      |                                                                                                                                                                                                                               |
|                         |                                                                    | Cube strength                                                            |                      |                                      |                                                                                                                                                                                                                               |
|                         |                                                                    | Sieve                                                                    |                      |                                      |                                                                                                                                                                                                                               |
|                         |                                                                    | Sedimentation                                                            |                      |                                      |                                                                                                                                                                                                                               |
|                         | Admixtures                                                         |                                                                          |                      | Required                             | Quality management and product certification schemes apply.<br><br>Data on their suitability, including previous experience should be made available.<br><br>See sub-Clause 1711.10                                           |
| 1712                    | Reinforcement                                                      | Steel bars                                                               |                      | Required (BS4449+A 2)                | Product certification scheme applies                                                                                                                                                                                          |
|                         |                                                                    | Steel wire                                                               |                      | Required (BS4482)                    |                                                                                                                                                                                                                               |
|                         |                                                                    | Steel fabric                                                             |                      | Required (BS4483)                    |                                                                                                                                                                                                                               |
|                         |                                                                    | Stainless Steel                                                          |                      | Required (BS6744+A 2)                |                                                                                                                                                                                                                               |
| 1713                    | Fabricated reinforcement                                           |                                                                          |                      | Required                             | Certification that fabricated reinforcement complies with the routine inspection / testing requirements of BS 8666 shall be required if the fabrication is not covered by a product certification scheme listed in Appendix B |
| 1716                    | Reinforcement jointing systems                                     | Permanent elongation<br>Characteristic strength<br>(Manufacturer's test) |                      | Required for each type of connection | BBA Roads and Bridges certificate or CARES certificate of product assessment or fully equivalent scheme apply                                                                                                                 |

## Part 4: Specification

## Appendix 1/5: Testing to be Carried out by the Company

| Clause                  | Work, Goods or Material                                                                  | Test                                                                                          | Frequency of Testing  | Test Certificate                                         | Comments                                                                        |
|-------------------------|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------|----------------------------------------------------------|---------------------------------------------------------------------------------|
| Series 1700 (continued) |                                                                                          |                                                                                               |                       |                                                          |                                                                                 |
| 1717                    | Reinforcement metal arc welding                                                          | Welding procedure approval (BS7123)                                                           | As required in BS7123 |                                                          | Tests should be carried out by an independent testing body specified in BS 8666 |
|                         |                                                                                          | Welder approval (BS7123)                                                                      |                       |                                                          |                                                                                 |
| 1718                    | Prestressing tendons                                                                     | Steel wire                                                                                    |                       | Required (BS5896)                                        | Product certification scheme applies                                            |
|                         |                                                                                          | Steel bar                                                                                     |                       | Required (BS4486)                                        |                                                                                 |
|                         |                                                                                          | Seven-wire strand                                                                             |                       | Required (BS5896)                                        |                                                                                 |
|                         | Prestressing steel (all types)                                                           | Proof load<br>Breaking load<br>Elongation<br>Ductility<br>Relaxation<br>Modulus of elasticity | As required           | Required (BS5896)<br>(BS4486)                            |                                                                                 |
|                         | Super strand to BS5896 or other than lowest strength 3-7 millimetres dia wires to BS5896 | 0.1% proof load<br>Breaking load                                                              | Each reel             |                                                          |                                                                                 |
| 1724                    | Post-tensioning anchorages                                                               | Tests in accordance with BS EN 13391 (Manufacturer's tests)                                   |                       | Required (BS EN 13391)                                   | Product certification scheme applies                                            |
| 1726                    | Stainless steel bar                                                                      |                                                                                               |                       | Required (BS6744+A2)                                     | Product certification scheme applies                                            |
| 1727                    | Inspection and testing of structures and components                                      |                                                                                               |                       |                                                          |                                                                                 |
| Series 1800             |                                                                                          |                                                                                               |                       |                                                          |                                                                                 |
| 1801<br>1803            | Structural steels to BS EN 10025-1 to -4 and , BS EN 10025-6, BS EN 10210                |                                                                                               |                       | Required                                                 |                                                                                 |
|                         | Structural steels to BS 7668                                                             |                                                                                               |                       | Required (BS7668)                                        |                                                                                 |
|                         | Stainless steels to BS 970,BS EN 10084, BS EN 10087, BS EN 10095,                        |                                                                                               |                       | Required (BS 970, BS EN 10084, BS EN 10087, BS EN 10095) |                                                                                 |



## Part 4: Specification

## Appendix 1/5: Testing to be Carried out by the Company

| Clause                 | Work, Goods or Material                                                              | Test                                             | Frequency of Testing                             | Test Certificate                                                              | Comments                                                               |
|------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Series 1800 continued  |                                                                                      |                                                  |                                                  |                                                                               |                                                                        |
| 1801<br>1803<br>cont'd | Stainless steels to BS EN 10029, BS EN 10048, BS EN 10051, BS EN 10258, BS EN 10259. |                                                  |                                                  | Required (BS EN 10029, BS EN 10048, BS EN 10051, BS EN 10258 and BS EN 10259) |                                                                        |
|                        | Steel plate                                                                          | Ultrasonic testing                               | As required                                      |                                                                               |                                                                        |
|                        | Bolts, nuts and washers                                                              |                                                  |                                                  |                                                                               | Quality management scheme applies                                      |
|                        | All types except high strength friction grip                                         | Test specified in BS 4395: Part 2                | As required in BS 4395: Part 2                   |                                                                               |                                                                        |
|                        | High Strength Friction Grip                                                          | Test specified in BS 4395: Part 1 or Part 2      | As required in BS 4395: Part 1 or Part 2         |                                                                               |                                                                        |
|                        | Tension Control Bolts                                                                | Test specified in JSS II-09-1996 or BS 4395      | As required in JSS II-09-1996 or BS 4395         |                                                                               |                                                                        |
|                        | Welding electrodes                                                                   |                                                  |                                                  |                                                                               |                                                                        |
|                        | Covered steel                                                                        |                                                  |                                                  | Required (BS EN 499)                                                          |                                                                        |
|                        | Wire                                                                                 |                                                  |                                                  | Required (BS EN 756, BS EN 760)                                               |                                                                        |
|                        | Welding                                                                              |                                                  |                                                  |                                                                               |                                                                        |
|                        | Welding procedures                                                                   | Tests specified in BS EN ISO 15614-1             | As required in BS ISO 15614-1 and Appendix 18/1  |                                                                               | Results to be reported in accordance with Annex A of BS EN ISO 15614-1 |
|                        | Welder qualification                                                                 | Tests specified in BS EN 287: Part 1             | As required in BS EN 287: Part 1 for each welder | Required (BS EN 287: Part 1)                                                  | Certificate to be in accordance with Annex B of BS EN 287: Part 1      |
|                        | Butt weld 'run-off' plates                                                           | Destructive tests specified in BS 5400: Part 6   | As required in BS 5400: Part 6                   |                                                                               |                                                                        |
|                        | Butt welds and adjacent areas of steelwork                                           | Non-destructive tests using methods to be agreed | As required in BS 5400: Part 6                   |                                                                               |                                                                        |
|                        | Fillet welds                                                                         | Non-destructive tests                            |                                                  |                                                                               |                                                                        |

Part 4: Specification

**Appendix 1/5: Testing to be Carried out by the Company**

| Clause                | Work, Goods or Material                                          | Test                                                                            | Frequency of Testing         | Test Certificate        | Comments                                                |
|-----------------------|------------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------|-------------------------|---------------------------------------------------------|
| Series 1800 continued |                                                                  |                                                                                 |                              |                         |                                                         |
| 1801                  | Welding (cont'd)                                                 |                                                                                 |                              |                         |                                                         |
| 1803 cont'd           | Flame cutting and shearing                                       | Tests to demonstrate procedures to comply with BS5400: Part 6 and Appendix 18/1 | As required in Appendix 18/1 |                         |                                                         |
|                       | Stud shear connectors                                            | Fixing (BS 5400: Part 6)                                                        | Each stud                    |                         |                                                         |
|                       |                                                                  | Bending (BS5400: Part 6)                                                        | As required                  |                         |                                                         |
| Series 1900           |                                                                  |                                                                                 |                              |                         |                                                         |
| 1903                  | Abrasives                                                        | Grading                                                                         | As required                  |                         |                                                         |
|                       |                                                                  | Hardness                                                                        |                              |                         |                                                         |
| 1909                  | Galvanised coatings                                              | Test specified in BS EN ISO 1461                                                | As required                  |                         |                                                         |
|                       | Aluminium and zinc spray coatings                                | Test specified in BS EN 22063                                                   | As required                  |                         | Areas to be tested to be in accordance with Clause 1910 |
|                       | Aluminium coating material                                       |                                                                                 |                              | Required (BS EN 1301-1) |                                                         |
|                       | Zinc coating material                                            |                                                                                 |                              | Required (BS EN 1179)   |                                                         |
|                       | Sherardized coatings                                             | Test specified in BS 4921                                                       | As required                  |                         |                                                         |
|                       | Zinc electroplated coatings                                      | Test specified in BS 3382: Part 2                                               | As required                  |                         |                                                         |
|                       | Plating to high strength friction grip and tension control bolts |                                                                                 |                              |                         |                                                         |
| 1910                  | Metal spray coatings                                             | Tensile test specified in BS EN 22063                                           | As required                  |                         |                                                         |
|                       |                                                                  | Grid test specified in BS EN 22063                                              | As required                  |                         |                                                         |

Part 4: Specification

**Appendix 1/5: Testing to be Carried out by the Company**

| Clause                | Work, Goods or Material          | Test                              | Frequency of Testing         | Test Certificate | Comments                                                             |
|-----------------------|----------------------------------|-----------------------------------|------------------------------|------------------|----------------------------------------------------------------------|
| Series 1900 continued |                                  |                                   |                              |                  |                                                                      |
| 1911                  | Paints                           | 'A' and 'B' Samples               | Specific gravity             |                  | Samples will be selected in accordance with Clause 1911SE            |
|                       |                                  |                                   | Colour match                 |                  |                                                                      |
|                       |                                  |                                   | Composition                  |                  |                                                                      |
|                       |                                  |                                   | Application characteristics  |                  |                                                                      |
| Series 2000           |                                  |                                   |                              |                  |                                                                      |
| 2003                  | Permitted waterproofing systems  |                                   |                              |                  | Registration and BBA Roads and Bridges Agreement certification apply |
|                       | Additional bituminous protection | Tests specified in BS594: Part 1  | 1 per 15 tonnes              |                  | Sampling to comply with BS594: Part 1                                |
|                       | Stability value                  | Test specified in BS598: Part 107 | 1 per 15 tonnes              |                  |                                                                      |
| 2004                  | Tar                              | Tests specified in BS76           | 1 per source                 |                  | Sampling to comply with BS76                                         |
|                       | Cut back bitumen                 | Tests specified in BS3690: Part 1 | 1 per source                 |                  | Sampling to comply with BS3690: Part 1                               |
| Series 2100           |                                  |                                   |                              |                  |                                                                      |
| 2101                  | Bridge bearings                  | Elastomeric bearings              | Hardness                     | As required      | Required (BS5400: Section 9.2)                                       |
|                       |                                  |                                   | Tensile strength             |                  |                                                                      |
|                       |                                  |                                   | Elongation                   |                  |                                                                      |
|                       |                                  |                                   | Ageing                       |                  |                                                                      |
|                       |                                  |                                   | Compression set              |                  |                                                                      |
|                       |                                  |                                   | Ozone resistance             |                  |                                                                      |
|                       | Complete bearings                | Tests specified in Appendix 21/1  | As required in Appendix 21/1 |                  |                                                                      |

Part 4: Specification

**Appendix 1/5: Testing to be Carried out by the Company**

| Clause        | Work, Goods or Material | Test                          | Frequency of Testing                                                                                                                              | Test Certificate                       | Comments                                                                                |
|---------------|-------------------------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------|
| Series 2400   |                         |                               |                                                                                                                                                   |                                        |                                                                                         |
| 2401          | Masonry cement          |                               |                                                                                                                                                   | Required (BS EN 413-1)                 | Quality management scheme applies                                                       |
|               |                         | Chloride content              | Monthly                                                                                                                                           | Required                               | Test to be carried out by the manufacturer and results included on the test certificate |
| 2402          | Sand                    |                               |                                                                                                                                                   | Required per consignment (BS EN 13139) |                                                                                         |
|               |                         | Chloride content              | Monthly                                                                                                                                           |                                        | Test to be carried out by the manufacturer and results included on the test certificate |
| 2403          | Water                   | Tests specified in BS EN 1008 | As required                                                                                                                                       |                                        |                                                                                         |
| 2404          | Mortar admixtures       |                               |                                                                                                                                                   | Required (BS EN 934-3)                 |                                                                                         |
| 2405          | Lime                    |                               |                                                                                                                                                   | Required (BS EN 459-1)                 |                                                                                         |
| 2406/<br>2417 | Bricks                  |                               |                                                                                                                                                   |                                        |                                                                                         |
|               |                         | Clay                          | (Soluble salt content<br>Efflorescence<br>Comprehensive strength<br><br>Water absorption<br>Initial rate of suction) (BS EN 771-1/TRL Report 447) |                                        |                                                                                         |
|               |                         | Calcium silicate              |                                                                                                                                                   | Required (BS 187)                      |                                                                                         |
|               | Concrete                |                               |                                                                                                                                                   | Required (BS 6073-1/BS EN 772-2)       |                                                                                         |
| 2407          | Blocks                  |                               |                                                                                                                                                   |                                        |                                                                                         |
|               |                         | Concrete                      |                                                                                                                                                   | Required (BS6073-1/BS EN 772-2)        |                                                                                         |

Part 4: Specification

**Appendix 1/5: Testing to be Carried out by the Company**

| Clause                | Work, Goods or Material                                                                           | Test                                            | Frequency of Testing   | Test Certificate                                                                                    | Comments                                                                                                |
|-----------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Series 2400 continued |                                                                                                   |                                                 |                        |                                                                                                     |                                                                                                         |
| 2408                  | Reconstituted stone                                                                               |                                                 |                        |                                                                                                     |                                                                                                         |
| 2410<br>2411          | Stainless steel                                                                                   |                                                 |                        |                                                                                                     |                                                                                                         |
|                       | Wire/fabric                                                                                       |                                                 |                        | Required (BS EN 10088-1)                                                                            |                                                                                                         |
|                       | Bars                                                                                              |                                                 |                        | Required (BS6744)                                                                                   |                                                                                                         |
|                       | Ready mixed mortars                                                                               |                                                 |                        | Required (BS4721)                                                                                   |                                                                                                         |
|                       | Mortars                                                                                           | Tests specified in Appendix A1 of BS EN 10521-1 | 1 set of tests per mix |                                                                                                     |                                                                                                         |
| Series 2500           |                                                                                                   |                                                 |                        |                                                                                                     |                                                                                                         |
| 2501                  | Materials for corrugated steel buried structures exceeding 900 mm clear span or internal diameter |                                                 |                        |                                                                                                     | Type approval applies                                                                                   |
|                       | Steel components                                                                                  |                                                 |                        | Required as appropriate to the standard or specification listed in the type of approval Certificate | BBA Roads and Bridges Certification applies                                                             |
|                       | Zinc coating                                                                                      |                                                 |                        |                                                                                                     |                                                                                                         |
|                       | Protective coating                                                                                |                                                 |                        |                                                                                                     |                                                                                                         |
|                       | Paved invert system                                                                               |                                                 |                        |                                                                                                     |                                                                                                         |
| 2502                  | Materials for reinforcing elements, prefabricated facing and capping units, and washers           |                                                 |                        |                                                                                                     | BBA Roads and Bridges Certification applies                                                             |
|                       | Carbon steel strip                                                                                |                                                 |                        | Required (BS1449: Part 1.1 or BS EN 10025-1) and BS EN 10025-2)                                     | Silicon content and mechanical properties to be stated on the certificate                               |
|                       | Stainless steel strip                                                                             |                                                 |                        | Required (BS EN 10029, 10048, 10051, 10258 and 10259)                                               | Mechanical properties to be stated on the certificate                                                   |
|                       | Reinforcing bar for anchor elements                                                               |                                                 |                        | Required (BS4449)                                                                                   | Tests scheduled under Clauses 1717 and 1909 are required for welding and galvanising of anchor elements |

Part 4: Specification

Appendix 1/5: Testing to be Carried out by the Company

| Clause                | Work, Goods or Material                                                                                                                              | Test                   | Frequency of Testing                                                                                                                                | Test Certificate                                      | Comments                                                               |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------------------------|
| Series 2500 continued |                                                                                                                                                      |                        |                                                                                                                                                     |                                                       |                                                                        |
| 2502<br>cont'd        | Materials for fasteners                                                                                                                              | Stainless steel        |                                                                                                                                                     | Required (BS EN 10088-1 (BS EN ISO 3506-1 and 3506-2) |                                                                        |
|                       |                                                                                                                                                      | Bolts, screws and nuts |                                                                                                                                                     | Required (BS EN ISO 898, 4016, 4018, 4034)            | Tests scheduled under Clause 1909 are required for hot dip galvanising |
| 2503                  | Materials for pocket type reinforced brickwork retaining wall structures                                                                             | Clay bricks            | (Soluble salt content<br>Efflorescence<br>Compressive strength<br><br>Water absorption<br><br>Initial rate of suction) (BS 3921/TRL Report 447) (N) | 1 set of tests per type of brick                      |                                                                        |
|                       |                                                                                                                                                      |                        |                                                                                                                                                     |                                                       |                                                                        |
| 2504                  | Environmental barriers                                                                                                                               | Timber                 |                                                                                                                                                     |                                                       | Quality management scheme applies                                      |
|                       |                                                                                                                                                      | Concrete               |                                                                                                                                                     |                                                       |                                                                        |
|                       |                                                                                                                                                      | Steel                  |                                                                                                                                                     |                                                       |                                                                        |
|                       |                                                                                                                                                      | Brickwork              |                                                                                                                                                     |                                                       |                                                                        |
|                       |                                                                                                                                                      | Other materials        |                                                                                                                                                     |                                                       |                                                                        |
|                       |                                                                                                                                                      | Barriers               | Sound absorption                                                                                                                                    | As required in Appendix 25/4                          |                                                                        |
|                       |                                                                                                                                                      | Sound insulation       |                                                                                                                                                     |                                                       |                                                                        |
|                       | Post foundations                                                                                                                                     | Loading test on site   | As required in Appendix 25/4                                                                                                                        |                                                       |                                                                        |
| 2505,<br>2506         | Drainage structures/buried rigid pipes for drainage structures.<br><br>Pipes for drains and culverts having diameters or clear span exceeding 900 mm | Vitrified clay         |                                                                                                                                                     |                                                       | Product certification scheme applies                                   |
|                       |                                                                                                                                                      | Concrete PC/SRC        | (Manufacturer's test)                                                                                                                               |                                                       | See sub-clause 2506.28                                                 |
|                       |                                                                                                                                                      | Iron                   |                                                                                                                                                     |                                                       |                                                                        |
|                       |                                                                                                                                                      | Corrugated steel       | (Manufacturer's test)                                                                                                                               |                                                       | Type Approval Certificate and BBA Roads and Bridges Certificate apply  |

Part 4: Specification

**Appendix 1/5: Testing to be Carried out by the Company**

| Clause      | Work, Goods or Material                                 | Test                                                                    | Frequency of Testing         | Test Certificate             | Comments                                                                 |
|-------------|---------------------------------------------------------|-------------------------------------------------------------------------|------------------------------|------------------------------|--------------------------------------------------------------------------|
| Series 2600 |                                                         |                                                                         |                              |                              |                                                                          |
| 2601        | Bedding mortar materials                                |                                                                         |                              | Required for each batch      | Certification in accordance with Clause 2601 is required                 |
|             | Bedding Mortar                                          | Flow cone test                                                          | Each batch                   |                              | Laboratory tests                                                         |
|             |                                                         | Flow between glass plates                                               |                              |                              |                                                                          |
|             |                                                         | Compressive strength                                                    |                              |                              |                                                                          |
|             |                                                         | Expansion test                                                          |                              |                              |                                                                          |
|             |                                                         | Water absorption                                                        |                              |                              |                                                                          |
|             |                                                         | Elastic stability                                                       | 1 per source                 |                              |                                                                          |
|             | Flow cone test<br>Compressive strength                  | Each load                                                               |                              | Site control tests           |                                                                          |
| 2604        | Plastic coating to fencing posts, gates and ancillaries |                                                                         |                              | Required (BS 1722 : Part 16) | Certification by powder manufacturer and coating applicator is required. |
| 2607        | Granolithic concrete                                    |                                                                         |                              |                              | Testing to be in accordance with Clauses 1702, 1703, 1707 and 1710       |
| Series 3000 |                                                         |                                                                         |                              |                              |                                                                          |
| 3001        | General                                                 |                                                                         |                              |                              | Inspection reports as required in Appendix 30/1                          |
| 3005        | Grass Seeding, Wildflower Seeding and Turfing           | Rate of spread of fertiliser                                            | 1 per 1000 square metres     |                              |                                                                          |
|             |                                                         | Rate of spread of seeding                                               | 1 per 1000 square metres     |                              |                                                                          |
|             |                                                         | Chemical analysis of fertiliser                                         | 1 per source                 |                              |                                                                          |
|             |                                                         | Grass seed germination and purity (Official Seed Testing Station tests) | 1 per source and mix variety | Required prior to sowing     |                                                                          |
| Series 5000 |                                                         |                                                                         |                              |                              |                                                                          |
| 5003        | Abrasives                                               | Grading                                                                 | As required                  |                              |                                                                          |
|             |                                                         | Hardness                                                                |                              |                              |                                                                          |
| 5005        | Aluminium and zinc spray coatings                       | Test specified in BS EN 22063                                           | As required                  |                              | Areas to be tested in accordance with Clause 5006                        |
|             | Aluminium coating material                              |                                                                         |                              | Required (BS EN 1301-1)      |                                                                          |
|             | Zinc coating material                                   |                                                                         |                              | Required (BS EN 1179)        |                                                                          |

Part 4: Specification

**Appendix 1/5: Testing to be Carried out by the Company**

| Series 5000 continued |                                                         |                                       |                      |                  |                                                           |
|-----------------------|---------------------------------------------------------|---------------------------------------|----------------------|------------------|-----------------------------------------------------------|
| Clause                | Work, Goods or Material                                 | Test                                  | Frequency of Testing | Test Certificate | Comments                                                  |
| 5005<br>cont          | Sheradized coatings                                     | Tests specified in BS 4921            | As required          |                  |                                                           |
|                       | Zinc electroplated coatings                             | Tests specified in BS 3382: Part 2    | As required          |                  |                                                           |
|                       | Plating to high strength grip and tension control bolts |                                       |                      |                  |                                                           |
| 5006                  | Metal spray coatings                                    | Tensile test specified in BS EN 22063 | As required          |                  |                                                           |
|                       |                                                         | Grid test specified in BS EN 22063    | As required          |                  |                                                           |
| 5007<br>5007SE        | Paints                                                  |                                       |                      |                  | Samples will be selected in accordance with Clause 5007SE |
|                       | 'A' and 'B' Samples                                     | Specific gravity                      |                      |                  |                                                           |
|                       |                                                         | Colour match                          |                      |                  |                                                           |
|                       |                                                         | Composition                           |                      |                  |                                                           |
|                       |                                                         | Application Characteristics           |                      |                  |                                                           |



**Appendix 1/6: Supply and Delivery of Samples to the Contracting Authority**

- 1 When required by the Contracting Authority, the Company shall provide samples of any material proposed to be incorporated in the New Works.

**Appendix 1/7: Site Extent and Limitations of Use****1 New Works Site Extent**

- 1.1 The New Works Site extent is detailed in the Agreement of these New Works Requirements and comprises:
- a) The Land Made Available by the Scottish Ministers for the New Works as detailed in the Land Made Available by the Scottish Ministers for the New Works Drawings listed in Appendix 0/4; and
  - b) Any further land acquired by or conveyed to the Scottish Ministers (from any persons, including the Company) from time to time for the purposes of the Design and the New Works.
- 1.2 The Company shall make provision for carrying out work on private land as required under this Agreement for example Accommodation Works, traffic signing, road lighting, drainage works and otherwise.

**2 Limitations on the Use of the New Works Site**

- 2.1 The New Works Site shall be used solely for the construction and completion of the New Works.
- 2.2 The Company shall not use areas of land with a temporary right of access for any purpose other than the construction and completion of the New Works.
- 2.3 When carrying out Accommodation Works on land not made available by the Scottish Ministers for the New Works, the Company shall minimise the area of land occupied to that which is essential for the safe construction and completion of such part of the New Works.
- 2.4 The Company shall ensure that all areas of land which have been temporarily occupied are reinstated to the satisfaction of the affected landowner, occupier and the Relevant Authorities.
- 2.5 Road access to the New Works Site shall be gained solely via roads as detailed by Appendix 1/19.
- 2.6 The Company may gain entry to the New Works Site via private land only with the prior express agreement in writing of the landowner and occupier/tenant. Any access to private land from a public road shall be to the satisfaction of the Relevant Authority. The Company shall bear full responsibility for negotiation, paying for and bearing all costs relating to these accesses and for any matters arising with parties who consider themselves to be affected by these accesses.
- 2.7 The Company shall erect appropriate signs to show accesses and restricted routes.
- 2.8 The Company shall comply with the restrictions imposed by Network Rail for all New Works to be carried out within or adjacent to Network Rail property.
- 2.9 The Company shall not cross any watercourses via the river banks and bed and shall take all necessary measures to avoid any disturbance of the banks and bed.
- 2.10 The Company's attention is drawn to the Special Requirements detailed in these New Works Requirements.

## Appendix 1/8: Operatives for the Contracting Authority

### 1 Operatives for the Contracting Authority

- 1.1 The following specification details the operative requirements for the New Works.
- 1.2 The Company shall provide the following operatives:

| Operative              | Number | Period Required                                  |
|------------------------|--------|--------------------------------------------------|
| Survey/Driver/Handyman | 1      | Period 1 as defined in Appendix 1/1              |
| Survey/Driver/Handyman | 1      | Periods 1 and 2 as defined in Appendix 1/1       |
| Office Attendant       | 1      | Period 1 as defined in Appendix 1/1              |
| Traffic Police Officer | 1      | Period 1 as defined in Appendix 1/1 – see Note 1 |

Note 1: The Company shall cover the cost of providing the Traffic Police Officer, who will be seconded on a full time basis from Police Scotland.

**Appendix 1/9: Noise and Vibration Control Applicable to the New Works Site****1 Noise Control Applicable to the New Works Site**

1.1 The Company shall consult and comply with the requirements of:

Aberdeen City Council; and

Aberdeenshire Council;

as appropriate, prior to commencement of work on the New Works Site.

These requirements, together with the Company's proposed methods of work and Constructional Plant, shall be discussed and agreed in writing by:

Aberdeen City Council; and

Aberdeenshire Council;

as appropriate, prior to commencement of the relevant activities.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of these requirements.

1.2 The Company shall comply with the contents and recommendations of British Standard BS 5228: 'Noise and Vibration Control on Construction and Open Sites', together with the specific requirements of this Appendix 1/9.

Further to this, the company shall refer to the Department for Environment, Food and Rural Affairs 'Update of Noise Database for Prediction of Noise on Construction and Open Sites' which is an update to the existing construction plant noise database, contained in Annex C, Part 1 of British Standard 5228 'Noise and Vibration Control on Construction and Open Sites'.

1.3 All Constructional Plant used for the New Works shall be subject to the acknowledgement of the Contracting Authority and shall be the quietest of its type practical for carrying out the work required and shall be maintained in good condition with regard to minimising noise output.

In this respect, the Company shall refer to BS 5228: 2009: 'Code of practice for noise and vibration control on construction and open sites, Part 1, which contains details of typical Constructional Plant noise levels that the Company shall use as a basis for prediction.

All Constructional Plant shall be operated and maintained in accordance with the manufacturer's written recommendations including the use and maintenance of any specific noise reduction measures.

1.4 Where the Design requires a diversion for traffic which places the traffic temporarily closer to adjacent properties, the Company shall carry out an assessment of the predicted noise levels associated with the construction and completion of the New Works (either temporary or permanent) and the use by traffic. If this assessment indicates an increase in the ambient noise levels at any properties of more than 3dBLA10(18hr), a suitable noise barrier (temporary or permanent) shall be provided as a minimum for the duration of the diversion works and diversion, and shall be placed prior to the commencement of any such work.

1.5 Best practicable means shall be employed including the positioning of Constructional Plant and activities to minimise noise at sensitive locations, the use of mufflers on pneumatic tools, the use of non-reciprocating Constructional Plant and the use, where practical, of affective sound reducing enclosures to ensure all Constructional Plant used in connection with the New Works operates with the minimum of noise.

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**Appendix 1/9: Noise and Vibration Control Applicable to the New Works Site**

The Company shall ensure that any piling works are kept to a practicable minimum and that machinery and vehicles are switched off when not in use.

- 1.6 Subject to the other requirements of this Agreement, the normal working hours within the New Works Site shall be Monday to Friday between 0700 and 1900 hours and Saturday between 0800 and 1300 hours, with no working on Sundays and public holidays.

Permissible construction noise levels for these periods in relation to pre-construction ambient noise levels are detailed in Table 9/1 below. Consent for work outside these hours may be given by Aberdeen City Council and Aberdeenshire Council as appropriate.

The Company shall have written permission to operate at the relevant permissible noise levels for each area, within the normal working hours, from Aberdeen City Council and Aberdeenshire Council as appropriate.

The Company shall apply, in writing, for consent to work outside normal working hours to Aberdeen City Council and Aberdeenshire Council as appropriate, at least 14 days in advance of the proposed work.

The granting of such consents shall be dependent, amongst other things, on the Company demonstrating to the satisfaction of Aberdeen City Council and Aberdeenshire Council as appropriate in their application that:

- a) it is not reasonably practicable to carry out the work during standard working hours;
- b) the Company has considered all mitigation measures and has implemented appropriate measures;
- c) all interested parties have been consulted; and
- d) all alternative means to reduce the amount of work to be undertaken out with standard working hours has been explored.

Written confirmation of consent shall be required for each and every occasion when the Company proposes to work out with standard working hours.

In the event of written permission being granted, the Company shall provide the Contracting Authority with a copy of the written permission at least 48 hours prior to commencing the work.

The Company shall also arrange for leaflets to be delivered to residents within 200 metres of the proposed New Works, giving a full description of the proposed Works, their duration, and of the sources, character and levels of noise expected to arise, including a named contact to respond to any noise or vibration concerns or nuisance.

Operating times and noise levels for Sundays and public holidays shall be subject to the agreement and written consent of Aberdeen City Council and Aberdeenshire Council as appropriate.

- 1.7 A pre-construction ambient noise assessment shall be undertaken by the Company, using an appropriately qualified acoustician who is a member of the Institute of Acoustics for agreement with Aberdeen City Council and Aberdeenshire Council as appropriate within 100 metres of where the New Works shall be undertaken, before the commencement of the New Works.

The noise assessment shall demonstrate the typical pre-construction ambient noise levels at representative properties adjacent to the New Works Site.

Measurement locations chosen for the pre-construction ambient noise assessment shall be representative of surrounding properties, shall be considered the "worst case" property in terms of noise levels for that particular area, and shall be directly compatible with the noise levels given in Table 9/1.

**Appendix 1/9: Noise and Vibration Control Applicable to the New Works Site**

The Company's acoustician shall be required to undertake additional assessments or noise measurements at locations and methods agreed previously in writing with the Contracting Authority, Aberdeen City Council and Aberdeenshire Council as necessary.

- 1.8 The pre-construction ambient noise levels, as detailed in paragraph 1.7 above, shall be used to calculate maximum permissible construction noise levels.

Any measured construction noise level shall not exceed any appropriate level, given in Table 9/1 below when compared to the pre-construction ambient noise level. The permissible construction noise level shall not be exceeded at any property in the surrounding area of the New Works.

In exceptional circumstances, permission may be granted to carry out works which exceed the levels given in Table 9/1 below with the agreement of the Aberdeen City Council and Aberdeenshire Council appropriate, provided that the Company can demonstrate that all possible mitigation measures shall be implemented.

- 1.9 Notwithstanding the specific requirements of this Appendix 1/9, the Company shall comply with the contents of Scottish Office Roads Directorate Office Section Instruction 2/92, The Noise Insulation (Scotland) regulations 1975.

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**Appendix 1/9: Noise and Vibration Control Applicable to the New Works Site**

**TABLE 9/1: PERMISSIBLE CONSTRUCTION NOISE**

| Typical Pre-Construction Ambient Noise as appropriate | Permissible Construction Noise Levels                      |                          |                                                      |                          |                                                          |                                                       |                          |                            |
|-------------------------------------------------------|------------------------------------------------------------|--------------------------|------------------------------------------------------|--------------------------|----------------------------------------------------------|-------------------------------------------------------|--------------------------|----------------------------|
|                                                       | Weekday working Monday to Friday excluding Public Holidays |                          |                                                      |                          |                                                          |                                                       |                          |                            |
|                                                       | Day (07.00-19.00)<br><i>*L<sub>Aeq,12hr</sub></i>          | L <sub>Amax</sub> (Fast) | Evening (19.00-22.00)<br><i>*L<sub>Aeq,3hr</sub></i> | L <sub>Amax</sub> (Fast) | Night Hours (23.00-07.00)<br><i>*L<sub>Aeq,8hr</sub></i> | Saturday (08.00-13.00)<br><i>*L<sub>Aeq,5hr</sub></i> | L <sub>Amax</sub> (Fast) | Sunday and public holidays |
| 35                                                    | 65                                                         | 86                       | 55                                                   | 65                       | Given on request                                         | 65                                                    | 86                       | Given on request           |
| 40                                                    | 65                                                         | 86                       | 55                                                   | 65                       |                                                          | 65                                                    | 86                       |                            |
| 45                                                    | 65                                                         | 86                       | 60                                                   | 70                       |                                                          | 65                                                    | 86                       |                            |
| 50                                                    | 70                                                         | 92                       | 60                                                   | 70                       |                                                          | 70                                                    | 92                       |                            |
| 55                                                    | 75                                                         | 96                       | 65                                                   | 75                       |                                                          | 75                                                    | 96                       |                            |
| 60                                                    | 75                                                         | 96                       | 65                                                   | 75                       |                                                          | 75                                                    | 96                       |                            |
| 65                                                    | 75                                                         | 96                       | 65                                                   | 75                       |                                                          | 75                                                    | 96                       |                            |
| 70                                                    | 80                                                         | 101                      | 80                                                   | 90                       |                                                          | 80                                                    | 101                      |                            |
| 75                                                    | 80                                                         | 101                      | 80                                                   | 90                       |                                                          | 80                                                    | 101                      |                            |

*\*All permissible levels should be façade.*

**Notes**

- (i) The pre-construction ambient noise level shall be the total  $L_{Aeq}$  as determined from the pre-construction ambient noise assessment from all the noise sources at the measurement location over the specified period.
- (ii) Maximum sound level shall be the highest value indicated on a sound level meter. New sound level meters shall comply with EC 61672-1:2002 (BS EN 61672-1:2003 Electroacoustics; Sound Level Meters; Specifications), Class 1 or 2. For all others, compliance with BS EN 60651:1994 or its equivalents, and also to BS EN 60804:1994 if either  $L_{eq}$  or SEL is available, to Types 0, 1 or 2.
- (iii) The measurement location shall be representative such that the measurements are representative of the noise which is experienced by the neighbouring properties and the microphone shall not be subject to any unusual screening.

**2 Specific Requirements for Noise Control in Respect of Camphill Milltimber Estate**

2.1 Notwithstanding the general requirements in respect of control of construction noise, the Company shall note that a Joint Statement has been agreed with Camphill Communities in respect of, inter alia, the effects of construction noise on Camphill Milltimber Estate at times outwith holiday periods during the Camphill school academic year. The following additional requirements shall apply in respect of the control of construction noise in relation to Camphill Milltimber Estate. "Holiday Periods" in relation to Camphill school shall be the periods of school holiday occurring at Easter, Summer, October, and Christmas/New Year each year.

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**Appendix 1/9: Noise and Vibration Control Applicable to the New Works Site**

- 2.2 Construction works carried out at any time or day outwith the hours of 07.30 to 18.00 Monday to Friday shall not result in perceptible levels of construction noise at Camphill Milltimber Estate. The Company shall prepare a detailed construction noise assessment (CNA) for the receptor locations noted below in respect of the predicted construction noise levels at the receptors noted below, for each stage of the Company's proposed programme of works:
- Beltane;
  - Camphill House; and
  - St Hilda's.
- In each case the construction noise levels shall be detailed in respect of the façade of the location exposed to the highest levels of construction noise.
- 2.3 In preparing the CNA the Company shall allow for the weighting factor of 5 dB (A) as described in Paragraph 8.5f) of BS 5228: Part 1:1997. This is in recognition of the potential sensitivities of particular children who may be resident within the Camphill Milltimber Estate.
- 2.4 The Company shall programme their planned construction works such that activities which are expected to give rise to the highest noise levels at the specified receptors are programmed to occur during Camphill school holiday periods wherever practicable. Where this cannot be achieved the Company shall identify the period proposed for such works and shall consult with the Contracting Authority and Camphill Communities in respect of this proposal.
- 2.5 The Company shall schedule their planned construction works such that activities outwith Camphill school holiday periods shall generally not result in predicted noise levels exceeding 55dB LAeq(12 hour) at each of the specified receptors noted in paragraph 2.2, including allowance for the noise weighting factor described in paragraph 2.3.
- 2.6 The Company shall take all practicable measures to minimise predicted construction noise levels at the receptors specified in Paragraph 2.2, which shall include, but not be limited to: use of construction plant giving rise to the lowest noise levels commensurate with construction and completion of the Works; and use of temporary noise mitigation measures, including barriers, placed either close to the noise source or at such other location as may be suitable for achieving effective mitigation. The effects of each noise mitigation measure allowed for within the CNA shall be identified explicitly within the CNA.
- 2.7 The CNA shall follow the general format of the Illustrative Camphill Construction Noise Assessment provided for information, modified as appropriate to reflect the Company's proposed construction sequence, the noise levels associated with the Company's proposed construction plant and equipment, and the particular mitigation measures proposed by the Company. This CNA shall be submitted to the Contracting Authority no later than 28 days prior to the proposed works commencement date for any works in any part of the New Works Site bounded to the south by the southern abutment of the River Dee Crossing, and to the north by Culter House Road. Following submission of the CNA, the Company shall consult with the Contracting Authority and Camphill Communities in respect of the CNA. The Company shall note that the activities to be included in the CNA shall not be restricted to those within the part of the New Works Site described above, but shall include all works at any location within the New Works Site which may contribute to predicted construction noise levels in excess of 55dB LAeq(12 hour) at each of the specified receptors noted in paragraph 2.3.
- 2.8 Following this consultation, and any modification of the CNA by the Company arising as a consequence of the consultation, the Contracting Authority shall approve the CNA, such approval not to be unreasonably withheld. The Company shall not commence any works



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**Appendix 1/9: Noise and Vibration Control Applicable to the New Works Site**

with the part of the New Works Site noted above prior to obtaining approval of the CNA from the Contracting Authority.

- 2.9 The Company may provide a single CNA for the whole duration of works within the part of the New Works Site described in paragraph 2.7, or a series of assessments covering discrete periods within the overall duration of such works. If the Company provides a series of assessments, each assessment shall be submitted to the Contracting Authority no later than 28 days prior to the proposed commencement date for the earliest works included within the relevant assessment, and each assessment shall be subject to the consultation and approval process set out in paragraphs 2.7 and 2.8.
- 2.10 The Company shall consult and comply with the Contracting Authority to include within the CNA identification of proposed noise monitoring locations and a method statement for undertaking and reporting daily monitoring of actual construction noise levels at these locations. The method statement shall describe how the recorded noise levels shall be appropriately compared to the noise levels predicted within the CNA to determine whether or not the predicted noise levels are being exceeded and, if so, to determine the extent to which the predicted noise levels are being exceeded.
- 2.11 The Company shall undertake monitoring of construction noise in accordance with the method statement within the approved CNA on all days outwith the Camphill school holiday periods during which works are being undertaken. The Company shall provide the Contracting Authority with the daily monitoring results within 24 hours of undertaking the monitoring. In addition, the Company shall provide a weekly report on the monitoring results from the preceeding week, comparing the actual noise levels with the predicted noise levels for that period, and provided detailed comments and analysis of any instance where the actual noise levels exceed the predicted noise levels.
- 2.12 If, in the opinion of the Contracting Authority and at its sole discretion, the monitoring results indicate that the Company is regularly and repeatedly exceeding the predicted noise levels set out within the approved CNA for reasons within the control of the Company, the Contracting Authority may require the Company to identify and implement measures to prevent further exceedences. Such measures may include some or all of the Company amending its programme of working, making use of alternative plant and equipment, and incorporating additional mitigation measures. Where such measures result in changes to the approved CNA the Company shall prepared a revised CNA. Any such revised CNA shall be subject to consultation with the Contracting Authority and Camphill Communities and approval by the Contracting Authority. During the period of preparation of any such revised CNA the Company may continue to undertake works within the part of the New Works Site described in paragraph 2.7, taking such further measures as may be necessary to prevent repeated and regular exceedence of the predicted noise levels within the then current approved CNA for reasons within the control of the Company.

**3 Vibration Control**

- 3.1 The Company shall consult and comply with the requirements of, Aberdeen City Council and Aberdeenshire Council as appropriate prior to commencement of New Works.

These requirements, together with the Company's proposed methods of work and Constructional Plant to be used shall be discussed and agreed in writing by Aberdeen City Council and Aberdeenshire Council as appropriate, prior to commencement of the relevant activities on Site.

The Company shall provide Consultation Certificates in accordance with the Certification Procedure in respect of this requirement.

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**Appendix 1/9: Noise and Vibration Control Applicable to the New Works Site**

- 3.2 The maximum permitted peak particle velocity (PPV) generated by continuous construction of the New Works shall be 5 millimetres/second measured at the property closest to the operations being carried out and applies to all operations.

Where the Construction of the Work is intermittent, the maximum PPV generated shall be no greater than 10 millimetres/second.

- 3.3 Ground vibration at any Structure, property or building and otherwise affected by blasting, shall be kept within the levels given in BS 7385: Part 2. Evaluation and Measurement for Vibration in Buildings; Guide to Damage Levels From Groundbourne Vibration.

The maximum peak component particle velocity measured next to any Structure under construction shall be:

- (a) Equal to or less than a zero to peak displacement of 0.6 mm/s at frequencies less than 4 Hz;
- (b) Less than 15 mm/s at 4 Hz, rising to less than 20 mm/s at 15 Hz; and
- (c) Less than 20 mm/s at 15 Hz, rising to less than 50 mm/s at 40 Hz or above.

With regard to vibration, the level for up to a maximum of three blasts per day, should be 8.5 mm/s, Monday to Friday between 10:00 hours and 16:00 hours. At any other times it should be 2.8 mm/s.

- 3.4 The Company shall provide written details of the proposed method and periodicity of monitoring of the Vibration Dose Value (VDV), to Aberdeen City Council and Aberdeenshire Council as appropriate.

3.5 Vibration Monitoring Equipment

- 3.5.1 The type of instrumentation suitable for monitoring vibration shall be a digital seismograph having the following minimum specification:

- a) Minimum sampling rate 1000 samples/second/channel;
- b) Capable of recording Peak Particle Velocity (Directly), Peak Acceleration (Calculated), Peak;
- c) Displacement (Calculated), Frequency at the Peak Velocity (Calculated);
- d) Dual Mode instrument having (a) Self Triggering Mode and (b) Continuous Monitoring Mode;
- e) Transducer - 3 orthogonally mounted transducers on one mounting unit;
- f) Frequency Range - 4.5 to 200 Hertz;
- g) Minimum Resolution - 0.05 millimetres/second, velocity;
- h) Range - 0 to 100 millimetres/second, velocity;
- i) Record of Events - hard copy printout and storage on solid state memory or disc for subsequent printout; and
- j) Power - 240 volt mains for continuous unattended operation plus internal battery with minimum of 24 hours capacity.

**Appendix 1/12: Setting Out and Existing Ground Levels****1 Setting Out and Existing Ground Levels**

- 1.1 The Company shall be responsible for the establishment of a grid of permanent ground survey stations throughout the New Works Site.
- 1.2 The Company shall supply setting out information, including a schedule of coordinated ground survey stations to the Contracting Authority whenever information is available, updated or revised.
- 1.3 The Company shall erect clearly marked chainage markers at 20 metre intervals at suitable locations for the duration of the New Works.
- 1.4 Before commencement of any earthworks, the Company shall establish permanent survey stations within the New Works Site for the setting out and checking of the New Works

## Appendix 1/13: Programme of Works

### 1 Form of Programme

- 1.1 The Company shall provide the Construction Programme in the form of a time chainage chart supported by gantt charts as follows:
- a) The work required for the Design and the New Works shall be subdivided into individual distinct operations which shall be illustrated in the time chainage chart and the gantt charts.
  - b) The time chainage chart shall be ruled in columns and rows using a horizontal scale of chainage (minimum 1:10,000, that is, 10 millimetres wide column per 100 metres) and a vertical scale of time (minimum 5 millimetres high row per week). On the time chainage chart the Company shall plot its programmed start (date/chainage point) and finish (date/chainage point) for each milestone, and shall draw a line (the "milestone line") connecting each start point to the corresponding finish point for that operation. The milestone line shall be taken as a representation of the Company's programmed average rate of progress of that operation from its start to its finish by reference to the date and chainage at intermediate (date/chainage) points along the milestone line. At the request of the Contracting Authority the Company shall provide further details by sub-dividing operations and showing the corresponding operation lines for each sub-division.
  - c) Where at a particular part of the New Works there is a local concentration of individual distinct operations which cannot be satisfactorily represented by milestone lines (for example at a junction, Structure and otherwise) such operations shall be shown on the time chainage chart as a rectangular box (the "operations box") whose diagonal is the operation line for all operations required for that part of the New Works considered en bloc. Each operations box shall be named to identify the part of the New Works to which it refers and shall show the number of the gantt chart (refer below) on which these operations are illustrated.
  - d) The time chainage chart shall show along its top a diagrammatic plan (the "diagram") showing, suitably annotated, the features of the parts of the New Works represented by the chart. The diagram shall be drawn to the same horizontal scale as the time chainage chart, and be aligned with the chainage columns of the chart in vertical projection.
  - e) At the request of the Contracting Authority, the Company shall provide a gantt chart for any part of the New Works. Gantt charts shall list the location and description of operations to which they refer and show for each listed operation a horizontal bar indicating the start, duration and stop date of that operation plotted to a horizontal scale of time. Gantt charts shall be provided by the Company for all operations contained in the operations boxes. The Contracting Authority shall have the right to require the Company to introduce additional operation boxes into the time chainage chart and the Company shall supply to the Contracting Authority the amended time chainage chart and gantt charts.
  - f) The Company shall also provide in writing, for the Contracting Authority, a general description of the arrangements and methods of construction which the Company proposes to adopt for carrying out the New Works, together with a detailed resources allocation histogram showing all plant labour (including site and head office staff) and materials the Company proposes to use in the construction of the New Works.
- 1.2 The level of detail should not be less than the following:

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**Appendix 1/13: Programme of Works**

## 1.2.1 Level 1

## (i) DESIGN

## a) For each Structure:

- (i) Foundation;
- (ii) Substructure;
- (iii) Superstructure;

## b) For each Project Road:

- (i) Alignment;
- (ii) Site Clearance
- (iii) Fencing
- (iv) Road Restraints
- (v) Drainage systems;
- (vi) Earthworks;
- (vii) Road pavement;
- (viii) Kerbs Footways and Paved Areas
- (ix) Road markings,
- (x) Signing,
- (xi) Lighting
- (xii) Traffic Scotland Equipment;
- (xiii) Statutory Undertakers and Private Apparatus
- (xiv) Ecological Mitigation & Planting

## (ii) CONSTRUCTION

## a) Each Structure;

## b) Earthworks - each cutting and embankment;

## c) Road works - in length not exceeding 1.0 kilometre for the Trunk Roads, Side Roads and New Means of Access:

- (i) Fencing;
- (ii) Site clearance;
- (iii) Topsoil strip;
- (iv) Drainage (pre-earthworks and second stage);
- (v) Sub-base;
- (vi) Sub-grades improvement layer;
- (vii) Road base or concrete paving;
- (viii) Surfacing;
- (ix) Soiling and seeding

## d) Major alterations to privately and publicly owned services and supplies;

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**Appendix 1/13: Programme of Works**

- e) Traffic management measures including operation of site accesses, plant crossing and temporary diversions;
  - f) Accommodation Works;
  - g) Planting
- 1.2.2 Level 2
- (i) At least four weeks before the commencement of any item of work:
    - a) For each Structure;
      - (i) Piling (where appropriate);
      - (ii) Substructure;
      - (iii) Superstructure;
      - (iv) Finishes;
    - b) Roadworks;
      - (i) As for Level 1 but intervals not exceeding 500 metres and including lighting, signing, soiling, seeding and planting, roadmarking, cabling and Traffic Scotland equipment;
      - (ii) All public alterations and additions to privately and publicly owned services and suppliers;
      - (iii) Planting to individual areas;
- 1.2.3 Level 3
- (i) Further breakdown of items and other details as may be required.
- 1.3 Schedule of Constraints
- 1.3.1 The Schedule of Constraints shall include, but shall not be limited to, the following:
- (i) compliance with technical approval procedures and Design and Design checking procedures in relation to Structures designed by the Company, including awaiting approvals, and checking;
  - (ii) consultation and compliance with the requirements of SNH, HS, SEPA and any relevant others regarding approval / consent procedures; and
  - (iii) compliance with the requirements of the Environmental Assessment Documents.

**Appendix 1/15: Accommodation Works****1 Accommodation Works**

- 1.1 Accommodation Works that have been agreed are shown on the attached schedules and their locations on the Accommodation Works Drawings as listed in Appendix 0/4.
- 1.2 The Company shall complete Accommodation Works as early as possible after the date of commencement of the New Works and in such a manner as to minimise inconvenience and disruption to landowners and occupiers/tenants.
- 1.3 Notwithstanding this, private access shall be provided across the New Works Site to adjoining landowners and affected parties to the same level as that which shall be provided by the completion of the New Works including Accommodation Works and until such time as the New Works including Accommodation Works are complete.
- 1.4 The Accommodation Works Access Tracks at the various locations defined in the following schedules shall be designed to comply with the following parameters:
  - (i) minimum horizontal radius and curve widening to suit agricultural vehicle use. The Design shall allow for use by a tractor and trailer combination and modern combines in transportation configuration;
  - (ii) access track and other surfacing shall be in accordance with paragraph 1.7.4 to Part 2 of these New Works Requirements; and
  - (iii) maximum vertical gradient shall be 8 percent where practicable.
- 1.5 The fencing and gate types in the Accommodation Works Schedules are shown on the Standard Detail drawings as listed in Appendix 0/4 or in Volume 3 of the MCHW.
- 1.6 Where Accommodation Works fencing is indicated along the boundary of the Land Made Available by the Scottish Ministers for the New Works, the fence shall be set parallel to the boundary with fence posts contiguous to the boundary and with the fence outside the Land Made Available by the Scottish Ministers for the New Works.
- 1.7 Accommodation Works fencing shall be connected to adjacent existing fencing or permanent fencing to ensure continuity of the fence.
- 1.8 Where water supplies shall be provided as part of the Accommodation Works, the Company shall make every effort to ensure that the installation prevents freezing of the water supply. Any lagging to pipe work shall be robust to prevent damage from livestock and otherwise.
- 1.9 The exact location of all gates, water troughs, holding pens and otherwise shall be agreed with the relevant landowner and occupier/tenant prior to installation.
- 1.10 Where watercourses shall be piped as part of the Accommodation Works, the Company shall carry out the Design in accordance with these New Works Requirements.
- 1.11 All drains and field drains severed by the New Works shall be reconnected and a plan showing depths and sizes submitted to the relevant landowner and copied to the Contracting Authority. All drainage and ditch systems shall be reinstated and properly tied into roadside drainages as appropriate.
- 1.12 Where existing water troughs are removed by the New Works, or fields are severed from their water supply, the Company shall ensure that a suitable temporary water supply and trough are provided to the satisfaction of the landowner and occupier/tenant pending permanent replacement of the water supply and trough by the landowner.
- 1.13 The Company shall liaise with landowners to identify their proposals for relocation of water troughs as appropriate. Where landowners have made arrangements for new water supplies to relocated water troughs, the Company shall liaise with the party engaged to

**Appendix 1/15: Accommodation Works**

install the new water supply and shall accommodate installation of the new water supply within the New Works Site as appropriate. In the event that installation is not expected to proceed in advance of construction of affected Project Roads, the Company shall make suitable provision for the future installation of water supplies to avoid the need for excavation of paved areas of the Project Roads. Where landowners have not made arrangements for new water supplies to relocated troughs, the Company shall confirm to the landowners concerned the provisions that shall be included within the New Works Site to enable future installation of water supplies to avoid the need for excavation of paved areas of the Project Roads

1.14 Table 1 below details the landowners for whom Accommodation Works are to be undertaken and the status of the Accommodation Works schedule included within this Appendix 1/15. The status noted within the table shall have the following meanings:

- (i) **Agreed:** The schedule of Accommodation Works has been agreed with the relevant landowner, who should be consulted regarding Design, construction and completion of the specified Accommodation Works as appropriate;
- (ii) **Pending Agreement:** The schedule of Accommodation Works has not yet been agreed with the relevant landowner; and
- (iii) **Instructed by Contracting Authority:** The schedule of Accommodation Works has been instructed by the Contracting Authority, who should be consulted regarding Design, construction and completion of the specified Accommodation Works as appropriate.

| Leg | LO Ref. No. | Name               | Status                              |
|-----|-------------|--------------------|-------------------------------------|
| FL  | [REDACTED]  | [REDACTED]         | Agreed                              |
| FL  | [REDACTED]  | [REDACTED]         | Agreed                              |
| FL  | [REDACTED]  | [REDACTED]         | Agreed                              |
| FL  | [REDACTED]  | [REDACTED]         | Instructed by Contracting Authority |
| FL  | [REDACTED]  | [REDACTED]         | Instructed by Contracting Authority |
| FL  | [REDACTED]  | [REDACTED]         | Agreed                              |
| FL  | [REDACTED]  | [REDACTED]         | Agreed                              |
| FL  | [REDACTED]  | [REDACTED]         | Agreed                              |
| FL  |             | [REDACTED]         |                                     |
| FL  |             | [REDACTED]         |                                     |
| FL  | [REDACTED]  | [REDACTED]         | Agreed                              |
| FL  | [REDACTED]  | [REDACTED]         | Agreed                              |
| FL  | [REDACTED]  | [REDACTED]         | Instructed by Contracting Authority |
| FL  | [REDACTED]  | [REDACTED]         | Agreed                              |
| FL  | [REDACTED]  | [REDACTED]         | Agreed                              |
| FL  | [REDACTED]  | [REDACTED]         | Agreed                              |
| FL  | [REDACTED]  | [REDACTED]         | Agreed                              |
| FL  |             | [REDACTED]         |                                     |
| FL  | [REDACTED]  | [REDACTED]         | Instructed by Contracting Authority |
| FL  | [REDACTED]  | [REDACTED]         | Agreed                              |
| FL  | 631         | Scottish Ministers | Agreed                              |
| FL  | [REDACTED]  | [REDACTED]         | Agreed                              |



Part 4: Specification

**Appendix 1/15: Accommodation Works**

| <b>Leg</b> | <b>LO Ref. No.</b> | <b>Name</b>        | <b>Status</b>                       |
|------------|--------------------|--------------------|-------------------------------------|
| FL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| FL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| FL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| FL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| FL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| FL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| FL         | 744                | Scottish Ministers | Agreed                              |
| FL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| FL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| FL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| FL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| FL         | [REDACTED]         | [REDACTED]         | Instructed by Contracting Authority |
| NL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| NL         | [REDACTED]         | [REDACTED]         | Instructed by Contracting Authority |
| NL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| NL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| NL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| NL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| NL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| NL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| NL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| NL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| NL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| NL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| NL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| NL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| NL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| NL         | [REDACTED]         | [REDACTED]         | Instructed by Contracting Authority |
| NL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| NL         | [REDACTED]         | [REDACTED]         |                                     |
| NL         |                    | [REDACTED]         |                                     |
| NL         |                    | [REDACTED]         |                                     |
| NL         |                    | [REDACTED]         |                                     |
| NL         |                    | [REDACTED]         |                                     |
| NL         | [REDACTED]         | [REDACTED]         | Agreed                              |
| NL         | [REDACTED]         | [REDACTED]         |                                     |

Part 4: Specification

Appendix 1/15: Accommodation Works

| Leg | LO Ref. No. | Name                | Status                              |
|-----|-------------|---------------------|-------------------------------------|
| NL  |             | [REDACTED]          |                                     |
| NL  |             | [REDACTED]          |                                     |
| NL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| NL  |             | [REDACTED]          |                                     |
| NL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| NL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| NL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| NL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| NL  | 63          | Scottish Ministers  | Agreed                              |
| NL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| NL  | [REDACTED]  | [REDACTED]          | Instructed by Contracting Authority |
| NL  | [REDACTED]  | [REDACTED]          | Instructed by Contracting Authority |
| NL  |             | [REDACTED]          |                                     |
| NL  |             | [REDACTED]          |                                     |
| NL  |             | [REDACTED]          |                                     |
| NL  |             | [REDACTED]          |                                     |
| NL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| NL  |             | [REDACTED]          |                                     |
| NL  |             | [REDACTED]          |                                     |
| NL  |             | [REDACTED]          |                                     |
| NL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| NL  | [REDACTED]  | [REDACTED]          | Instructed by Contracting Authority |
| NL  | 250         | Forestry Commission | Agreed                              |
| NL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| NL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| NL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| NL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| NL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| NL  | [REDACTED]  | [REDACTED] )        | Agreed                              |

Part 4: Specification

Appendix 1/15: Accommodation Works

| Leg | LO Ref. No. | Name       | Status                              |
|-----|-------------|------------|-------------------------------------|
| NL  | [REDACTED]  | [REDACTED] | Agreed                              |
| NL  | [REDACTED]  | [REDACTED] | Agreed                              |
| NL  | [REDACTED]  | [REDACTED] | Agreed                              |
| NL  | [REDACTED]  | [REDACTED] | Agreed                              |
| NL  | [REDACTED]  | [REDACTED] | Agreed                              |
| NL  | [REDACTED]  | [REDACTED] | Agreed                              |
| NL  | [REDACTED]  | [REDACTED] | Instructed by Contracting Authority |
| NL  | [REDACTED]  | [REDACTED] | Agreed                              |
| NL  | [REDACTED]  | [REDACTED] | Instructed by Contracting Authority |
| NL  | [REDACTED]  | [REDACTED] | Agreed                              |
| NL  | [REDACTED]  | [REDACTED] | Agreed                              |
|     |             |            |                                     |
|     |             |            |                                     |
| NL  | [REDACTED]  | [REDACTED] | Agreed                              |
| NL  | [REDACTED]  | [REDACTED] | Agreed                              |
| NL  | [REDACTED]  | [REDACTED] | Agreed                              |
| NL  | [REDACTED]  | [REDACTED] | Instructed by Contracting Authority |
| NL  | [REDACTED]  | [REDACTED] | Agreed                              |
| NL  | [REDACTED]  | [REDACTED] | Agreed                              |
| NL  | [REDACTED]  | [REDACTED] | Agreed                              |
| NL  | [REDACTED]  | [REDACTED] | Instructed by Contracting Authority |
| SL  |             | [REDACTED] |                                     |
| SL  | [REDACTED]  | [REDACTED] | Agreed                              |
| SL  | [REDACTED]  | [REDACTED] |                                     |
| SL  | [REDACTED]  | [REDACTED] |                                     |
| SL  | [REDACTED]  | [REDACTED] | Agreed                              |
| SL  |             | [REDACTED] |                                     |
| SL  | [REDACTED]  | [REDACTED] | Agreed                              |
| SL  |             | [REDACTED] |                                     |
| SL  | [REDACTED]  | [REDACTED] | Agreed                              |
| SL  |             | [REDACTED] |                                     |
| SL  | [REDACTED]  | [REDACTED] | Agreed                              |
| SL  |             | [REDACTED] |                                     |
| SL  | [REDACTED]  | [REDACTED] | Agreed                              |
| SL  |             | [REDACTED] |                                     |
| SL  | [REDACTED]  | [REDACTED] | Agreed                              |
| SL  |             | [REDACTED] |                                     |
| SL  | [REDACTED]  | [REDACTED] | Agreed                              |
| SL  |             | [REDACTED] |                                     |
| SL  | [REDACTED]  | [REDACTED] | Agreed                              |
| SL  |             | [REDACTED] |                                     |
| SL  | [REDACTED]  | [REDACTED] | Agreed                              |
| SL  |             | [REDACTED] |                                     |
| SL  | [REDACTED]  | [REDACTED] | Instructed by Contracting Authority |

Part 4: Specification

**Appendix 1/15: Accommodation Works**

| <b>Leg</b> | <b>LO Ref. No.</b> | <b>Name</b>         | <b>Status</b>                       |
|------------|--------------------|---------------------|-------------------------------------|
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | 223                | Scottish Ministers  | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | 253                | Forestry Commission | Agreed                              |
| SL         | 279                | Scottish Ministers  | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          |                                     |
| SL         | [REDACTED]         | [REDACTED]          |                                     |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          |                                     |
| SL         | [REDACTED]         | [REDACTED]          |                                     |
| SL         | [REDACTED]         | [REDACTED]          |                                     |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          |                                     |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Instructed by Contracting Authority |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          |                                     |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Agreed                              |
| SL         | [REDACTED]         | [REDACTED]          | Instructed by Contracting Authority |
| SL         | [REDACTED]         | [REDACTED]          | Instructed by Contracting Authority |

Part 4: Specification

Appendix 1/15: Accommodation Works

| Leg | LO Ref. No. | Name                | Status                              |
|-----|-------------|---------------------|-------------------------------------|
| SL  |             | [REDACTED]          |                                     |
| SL  |             | [REDACTED]          |                                     |
| SL  | [REDACTED]  | [REDACTED]          | Instructed by Contracting Authority |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Instructed by Contracting Authority |
| SL  | 566         | Scottish Ministers  | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | 590         | Forestry Commission | Agreed                              |
| SL  | 610         | Scottish Ministers  | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | 617         | Scottish Ministers  | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | 748         | Scottish Ministers  | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | 756         | Scottish Ministers  | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | 5005        | Scottish Ministers  | Agreed                              |
| SL  | 5137        | Scottish Ministers  | Agreed                              |
| SL  | 5138        | Scottish Ministers  | Agreed                              |
| SL  | 5142        | Scottish Ministers  | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |
| SL  | [REDACTED]  | [REDACTED]          | Agreed                              |

Part 4: Specification

Appendix 1/15: Accommodation Works

| Leg      | LO Ref. No. | Name                  | Status                              |
|----------|-------------|-----------------------|-------------------------------------|
| SL       |             | [REDACTED]            |                                     |
| SL       |             | [REDACTED]            |                                     |
| SL       | [REDACTED]  | [REDACTED]            | Agreed                              |
| SL       | [REDACTED]  | [REDACTED]            | Instructed by Contracting Authority |
| SL       | [REDACTED]  | [REDACTED]            | Agreed                              |
| SL       | [REDACTED]  | [REDACTED]            | Agreed                              |
| SL       | [REDACTED]  | [REDACTED]            | Agreed                              |
| SL       |             | [REDACTED]            |                                     |
| SL       | [REDACTED]  | [REDACTED]            | Agreed                              |
| SL       |             | [REDACTED]            |                                     |
| SL       |             | [REDACTED]            |                                     |
| SL       | [REDACTED]  | [REDACTED]            | Agreed                              |
| SL       |             | [REDACTED]            |                                     |
| SL       |             | [REDACTED]            |                                     |
| SL       | [REDACTED]  | [REDACTED]            | Agreed                              |
| SL       | [REDACTED]  | [REDACTED]            | Agreed                              |
| SL       | [REDACTED]  | [REDACTED]            | Agreed                              |
| NL/SL/FL | 100/108/116 | Aberdeen City Council | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | BT006       | Aberdeenshire Council | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |
| B-T      | [REDACTED]  | [REDACTED]            | Instructed by Contracting Authority |
| B-T      | [REDACTED]  | [REDACTED]            | Agreed                              |

Part 4: Specification

**Appendix 1/15: Accommodation Works**

| <b>Leg</b> | <b>LO Ref. No.</b> | <b>Name</b> | <b>Status</b> |
|------------|--------------------|-------------|---------------|
| B-T        | [REDACTED]         | [REDACTED]  | Agreed        |
| B-T        | [REDACTED]         | [REDACTED]  | Agreed        |
| B-T        | [REDACTED]         | [REDACTED]  | Agreed        |
| B-T        | [REDACTED]         | [REDACTED]  | Agreed        |
| B-T        | [REDACTED]         | [REDACTED]  | Agreed        |
| B-T        | [REDACTED]         | [REDACTED]  | Agreed        |
| B-T        | [REDACTED]         | [REDACTED]  | Agreed        |
| B-T        | [REDACTED]         | [REDACTED]  | Agreed        |
| B-T        | [REDACTED]         | [REDACTED]  | Agreed        |
| B-T        | [REDACTED]         | [REDACTED]  |               |
| B-T        | [REDACTED]         | [REDACTED]  |               |
| B-T        | [REDACTED]         | [REDACTED]  | Agreed        |
| B-T        | [REDACTED]         | [REDACTED]  | Agreed        |
| B-T        | [REDACTED]         | [REDACTED]  | Agreed        |
| B-T        | [REDACTED]         | [REDACTED]  | Agreed        |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/002/01 Rev. 2                                                                       |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 002/01                                                                                                                          | [REDACTED]                        | *Accommodation Works |



**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                     |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                     |                                   |
| <p><b>REFER TO DRAWING NUMBER:</b> B1033200/AW/003/01 Rev 1</p>                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                       |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                          |                     |                                   |
| <b>Ref No.</b>                                                                                                                         | <b>Requirements</b> | <b>Comments</b>                   |
| 003/001                                                                                                                                | [REDACTED]          | Scheme Works                      |
| 003/002                                                                                                                                | [REDACTED]          | Scheme Works                      |
| 003/003                                                                                                                                | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER: B1033200/AW/005/01 Rev.1</b>                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 005/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>            |              |                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/008/01 Rev 2, B1033200/AW/008/02 Rev 2, B1033200/AW/008/03 Rev 2 and B1033200/AW/008/04 Rev 2 |              |                                   |
| <b>OWNER(S):</b>                                                                                                                           |              | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                                 |              | Owner                             |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                              |              |                                   |
| Ref No.                                                                                                                                    | Requirements | Comments                          |
| 8/1                                                                                                                                        | [REDACTED]   | Scheme Works                      |
| 8/2                                                                                                                                        | [REDACTED]   | *Accommodation Works              |
| 8/3                                                                                                                                        | [REDACTED]   | *Accommodation Works              |
| 8/4                                                                                                                                        | [REDACTED]   | *Accommodation Works              |
| 8/5                                                                                                                                        | [REDACTED]   | *Accommodation Works              |
| 8/6                                                                                                                                        | [REDACTED]   | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|      |            |                      |
|------|------------|----------------------|
|      |            |                      |
| 8/7  | [REDACTED] | *Accommodation Works |
| 8/8  | [REDACTED] | Scheme Works         |
| 8/9  | [REDACTED] | Scheme Works         |
| 8/10 | [REDACTED] | Scheme Works         |
| 8/11 | [REDACTED] | *Accommodation Works |
| 8/12 | [REDACTED] | Scheme Works         |
| 8/13 | [REDACTED] | *Accommodation Works |
| 8/14 | [REDACTED] | *Accommodation Works |
| 8/15 | [REDACTED] | *Accommodation Works |
| 8/16 | [REDACTED] | Scheme Works         |

## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|      |             |                      |
|------|-------------|----------------------|
| 8/17 | [REDACTED]  | Scheme Works         |
| 8/18 | [REDACTED]  | Scheme Works         |
| 8/19 | [REDACTED]  | *Accommodation Works |
| 8/20 | [REDACTED]  | *Accommodation Works |
| 8/21 | [REDACTED]  | *Accommodation Works |
| 8/22 | [REDACTED]. | *Accommodation Works |
| 8/23 | [REDACTED]  | *Accommodation Works |
| 8/24 | [REDACTED]  | *Accommodation Works |
| 8/25 | [REDACTED]  | *Accommodation Works |
| 8/26 | [REDACTED]  | *Accommodation Works |
| 8/27 | [REDACTED]  | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|      |            |                      |
|------|------------|----------------------|
| 8/28 | [REDACTED] | Scheme Works         |
| 8/29 | [REDACTED] | Scheme Works         |
| 8/30 | [REDACTED] | Scheme Works         |
| 8/31 | [REDACTED] | *Accommodation Works |
| 8/32 | [REDACTED] | *Accommodation Works |
| 8/33 | [REDACTED] | Scheme Works         |
| 8/34 | [REDACTED] | *Accommodation Works |
| 8/35 | [REDACTED] | Scheme Works         |
| 8/36 | [REDACTED] | *Accommodation Works |
| 8/37 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|      |            |                      |
|------|------------|----------------------|
|      |            |                      |
| 8/38 | [REDACTED] | *Accommodation Works |
| 8/39 | [REDACTED] | *Accommodation Works |
| 8/40 | [REDACTED] | *Accommodation Works |
| 8/41 | [REDACTED] | *Accommodation Works |
| 8/42 | [REDACTED] | *Accommodation Works |
| 8/43 | [REDACTED] | *Accommodation Works |
| 8/44 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>REFER TO DRAWING NUMBER: B1033200/AW/010/01 Rev 4</b>                                                                        |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 010/01                                                                                                                          | [REDACTED]                        | Scheme Works         |
| 010/02                                                                                                                          | [REDACTED]                        | Scheme Works         |
| 010/03                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 010/04                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 010/05                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 010/06                                                                                                                          | [REDACTED]                        | *Accommodation Works |



**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 010/07 | [REDACTED] | *Accommodation Works |
| 010/08 | [REDACTED] | *Accommodation Works |
| 010/09 | [REDACTED] | *Accommodation Works |
| 010/10 | [REDACTED] | *Accommodation Works |
| 010/11 | [REDACTED] | Scheme Works         |
| 010/12 | [REDACTED] | *Accommodation Works |
| 010/13 | [REDACTED] | Scheme Works         |
| 010/14 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                                   |                      |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                                   |                      |
| <p><b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/013/01 Rev 2, B1033200/AW/013/02 Rev 2, B1033200/AW/013/03 Rev 2</p>                   |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                       | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                             | [REDACTED]                        |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                          |                                   |                      |
| <b>Ref No.</b>                                                                                                                         | <b>Requirements</b>               | <b>Comments</b>      |
| 13/01                                                                                                                                  | [REDACTED]                        | Scheme Works         |
| 13/02                                                                                                                                  | [REDACTED]                        | *Accommodation Works |
| 13/03                                                                                                                                  | [REDACTED]                        | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|       |            |                       |
|-------|------------|-----------------------|
| 13/04 | [REDACTED] | *Accommodation Works  |
| 13/05 | [REDACTED] | *Accommodation Works  |
| 13/06 | [REDACTED] | *Accommodation Works  |
| 13/07 | [REDACTED] | * Accommodation Works |
| 13/08 | [REDACTED] | *Accommodation Works  |
| 13/09 | [REDACTED] | Scheme Works          |
| 13/10 | [REDACTED] | *Accommodation Works  |
| 13/11 | [REDACTED] | Scheme Works          |
| 13/12 | [REDACTED] | *Accommodation Works  |
| 13/13 | [REDACTED] | *Accommodation Works  |

**Appendix 1/15: Accommodation Works**

|       |            |                      |
|-------|------------|----------------------|
| 13/14 | [REDACTED] | Scheme Works         |
| 13/15 | [REDACTED] | Scheme Works         |
| 13/16 | [REDACTED] | *Accommodation Works |
| 13/17 | [REDACTED] | *Accommodation Works |
| 13/18 | [REDACTED] | *Accommodation Works |
| 13/19 | [REDACTED] | *Accommodation Works |
| 13/20 | [REDACTED] | *Accommodation Works |
| 13/21 | [REDACTED] | Scheme Works         |
| 13/22 | [REDACTED] | *Accommodation Works |
| 13/23 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|       |            |                      |
|-------|------------|----------------------|
|       |            |                      |
| 13/24 | [REDACTED] | Scheme Works         |
| 13/25 | [REDACTED] | *Accommodation Works |
| 13/26 | [REDACTED] | Scheme Works         |
| 13/27 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                                   |                      |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                                   |                      |
| <p><b>REFER TO DRAWING NUMBER: B1033200/AW/017/01 Rev 4</b></p>                                                                        |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                       | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                             | Owners                            |                      |
| <p><b>LIST OF WORKS REQUIRED</b></p>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                         | <b>Requirements</b>               | <b>Comments</b>      |
| 17/01                                                                                                                                  | [REDACTED]                        | *Accommodation Works |
| 17/02                                                                                                                                  | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|       |            |                      |
|-------|------------|----------------------|
| 17/03 | [REDACTED] | *Accommodation Works |
| 17/04 | [REDACTED] | *Accommodation Works |
| 17/05 | [REDACTED] | *Accommodation Works |
| 17/06 | [REDACTED] | *Accommodation Works |
| 17/07 | [REDACTED] | *Accommodation Works |
| 17/08 | [REDACTED] | *Accommodation Works |
| 17/09 | [REDACTED] | *Accommodation Works |
| 17/10 | [REDACTED] | *Accommodation Works |
| 17/11 | [REDACTED] | 17/11                |

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**Appendix 1/15: Accommodation Works**

|       |            |       |
|-------|------------|-------|
|       |            |       |
| 17/12 | [REDACTED] | 17/12 |
| 17/13 | [REDACTED] | 17/13 |



**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/018/01 Rev.1                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 018/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 018/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 018/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 018/04                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 018/05                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 018/06                                                                                                                          | [REDACTED]          | *Accommodation Works              |

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**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 018/07 | [REDACTED] | *Accommodation Works |
| 018/08 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/019/01 Rev 2                                                                       |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 019/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 019/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 019/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 019/04                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER: 10332/AW/020/01/Rev 2</b>                                                                           |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 20/01                                                                                                                           | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/021/01 Rev 1                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| The Scottish Ministers<br>Victoria Quay<br>Edinburgh<br>EH6 6QQ                                                                 |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 021/01                                                                                                                          | [REDACTED]          | Scheme works                      |
| 021/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 021/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER: B1033200/AW/023/01 Rev 2</b>                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 023/01                                                                                                                          | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/025/01 Rev 3                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | 1. Owner                          |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 025/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 025/02                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 025/03                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 025/04                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 025/05                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 025/06                                                                                                                          | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 025/07 | [REDACTED] | Scheme Works         |
| 025/08 | [REDACTED] | Scheme Works         |
| 025/09 | [REDACTED] | *Accommodation Works |
| 025/10 | [REDACTED] | *Accommodation Works |



**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/026/01 Rev 2                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 026/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 026/02                                                                                                                          | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> 10332/AW/029/01 Rev 2                                                                           |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owner                             |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 29/01                                                                                                                           | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>REFER TO DRAWING NUMBER: B1033200/AW/034/01 Rev 1</b>                                                                        |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 34/01                                                                                                                           | [REDACTED]                        | Scheme Works         |
| 34/02                                                                                                                           | [REDACTED]                        | *Accommodation Works |
| 34/03                                                                                                                           | [REDACTED]                        | Scheme Works         |
| 34/04                                                                                                                           | [REDACTED]                        | *Accommodation Works |
| 34/05                                                                                                                           | [REDACTED]                        | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|       |            |                      |
|-------|------------|----------------------|
| 34/06 | [REDACTED] | *Accommodation Works |
| 34/07 | [REDACTED] | Scheme Works         |
| 34/08 | [REDACTED] | Scheme Works         |
| 34/09 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER: B1033200/AW/036/01 Rev 2</b>                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 036/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 036/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 036/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/037/01 Rev 2                                                                       |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 037/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 037/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 037/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 037/04                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER: B1033200/AW/038/01 Rev.1</b>                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 038/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 038/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 038/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 038/04                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER: 10332/AW/039/01 Rev 1</b>                                                                           |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 039/01                                                                                                                          | [REDACTED]          | Scheme Works                      |



**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                     |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                     |
| <p><b>REFER TO DRAWING NUMBER: B1033200/AW/052/01 Rev 4</b></p>                                                                        |                     |
| <b>OWNER(S):</b>                                                                                                                       | <b>OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             | [REDACTED]          |

**Appendix 1/15: Accommodation Works**

| <b>LIST OF WORKS REQUIRED</b> |                     |                      |
|-------------------------------|---------------------|----------------------|
| <b>Ref No.</b>                | <b>Requirements</b> | <b>Comments</b>      |
| 52/01                         | [REDACTED]          | *Accommodation Works |
| 52/02                         | [REDACTED]          | *Accommodation Works |
| 52/03                         | [REDACTED]          | *Accommodation Works |
| 52/04                         | [REDACTED]          | Scheme Works         |
| 52/05                         | [REDACTED]          | Scheme Works         |
| 52/06                         | [REDACTED]          | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|       |            |                      |
|-------|------------|----------------------|
| 52/07 | [REDACTED] | *Accommodation Works |
| 52/08 | [REDACTED] | *Accommodation Works |
| 52/09 | [REDACTED] | *Accommodation Works |
| 52/10 | [REDACTED] | *Accommodation Works |
| 52/11 | [REDACTED] | *Accommodation Works |
| 52/12 | [REDACTED] | *Accommodation Works |
| 52/13 | [REDACTED] | *Accommodation Works |
| 52/14 | [REDACTED] | Scheme Works         |

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**Appendix 1/15: Accommodation Works**

|       |            |                      |
|-------|------------|----------------------|
|       |            |                      |
| 52/15 | [REDACTED] | Scheme Works         |
| 52/16 | [REDACTED] | Scheme Works         |
| 52/17 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                                                |                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE</b><br/> <b>SPECIAL ROAD SCHEME</b><br/> <b>SCHEDULE A:</b><br/> <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                                          |
| <p><b>REFER TO DRAWING NUMBER: B1033200/AW/053/01 Rev 1</b></p>                                                                                                |                                          |
| <p><b>OWNER(S):</b></p>                                                                                                                                        | <p><b>LESSEE(S) AND OCCUPIER(S):</b></p> |
| <p>[REDACTED]</p>                                                                                                                                              | <p>[REDACTED]</p>                        |

**Appendix 1/15: Accommodation Works**

| <b>LIST OF WORKS REQUIRED</b> |                     |                      |
|-------------------------------|---------------------|----------------------|
| <b>Ref No.</b>                | <b>Requirements</b> | <b>Comments</b>      |
| 053/01                        | [REDACTED]          | Scheme Works         |
| 053/02                        | [REDACTED]          | Scheme Works         |
| 053/03                        | [REDACTED]          | *Accommodation Works |
| 053/04                        | [REDACTED]          | *Accommodation Works |
| 053/05                        | [REDACTED]          | *Accommodation Works |
| 053/06                        | [REDACTED]          | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 053/07 | [REDACTED] | *Accommodation Works |
| 053/08 | [REDACTED] | *Accommodation Works |
| 053/09 | [REDACTED] | Scheme Works         |
| 053/10 | [REDACTED] | Scheme Works         |
| 053/11 | [REDACTED] | *Accommodation Works |
| 053/12 | [REDACTED] | *Accommodation Works |
| 053/13 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                                   |
| <p><b>REFER TO DRAWING NUMBER: B1033200/AW/055/01 Rev. 1</b></p>                                                                       |                                   |
| <b>OWNER(S):</b>                                                                                                                       | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             | [REDACTED]                        |



**Appendix 1/15: Accommodation Works**

| <b>LIST OF WORKS REQUIRED</b> |                     |                      |
|-------------------------------|---------------------|----------------------|
| <b>Ref No.</b>                | <b>Requirements</b> | <b>Comments</b>      |
| 055/01                        | [REDACTED]          | *Accommodation Works |
| 055/02                        | [REDACTED]          | *Accommodation Works |
| 055/03                        | [REDACTED]          | *Accommodation Works |
| 055/04                        | [REDACTED]          | *Accommodation Works |
| 055/05                        | [REDACTED]          | Scheme Works         |
| 055/06                        | [REDACTED]          | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
| <b>REFER TO DRAWING NUMBER: B1033200/AW/056/01&amp;02 Rev 3</b>                                                                 |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | [REDACTED]                        |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 056/01                                                                                                                          | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 056/02 | [REDACTED] | Scheme Works         |
| 056/03 | [REDACTED] | Scheme Works         |
| 056/04 | [REDACTED] | *Accommodation Works |
| 056/05 | [REDACTED] | Scheme Works         |
| 056/06 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/058/01 Rev 3, B1033200/AW/058/02 Rev 4, B1033200/AW/058/03 Rev 3                    |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| Ref No.                                                                                                                         | Requirements                      | Comments             |
| 058/01                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 058/02                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 058/03                                                                                                                          | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 058/04 | [REDACTED] | *Accommodation Works |
| 058/05 | [REDACTED] | Scheme Works         |
| 058/06 | [REDACTED] | *Accommodation Works |
| 058/07 | [REDACTED] | Scheme Works         |
| 058/08 | [REDACTED] | *Accommodation Works |
| 058/09 | [REDACTED] | *Accommodation Works |
| 058/10 | [REDACTED] | *Accommodation Works |
| 058/11 | [REDACTED] | *Accommodation Works |
| 058/12 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 058/13 | [REDACTED] | *Accommodation Works |
| 058/14 | [REDACTED] | Scheme Works         |
| 058/15 | [REDACTED] | *Accommodation Works |
| 058/16 | [REDACTED] | Scheme Works         |
| 058/17 | [REDACTED] | *Accommodation Works |
| 058/18 | [REDACTED] | *Accommodation Works |
| 058/19 | [REDACTED] | Scheme Works         |
| 058/20 | [REDACTED] | *Accommodation Works |
| 058/21 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 058/22 | [REDACTED] | *Accommodation Works |
| 058/23 | [REDACTED] | *Accommodation Works |
| 058/24 | [REDACTED] | Scheme Works         |
| 058/25 | [REDACTED] | Scheme Works         |
| 058/26 | [REDACTED] | Scheme Works         |
| 058/27 | [REDACTED] | Scheme Works         |
| 058/28 | [REDACTED] | *Accommodation Works |
| 058/29 | [REDACTED] | Scheme Works         |
| 058/30 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 058/31 | [REDACTED] | Scheme Works         |
| 058/32 | [REDACTED] | Scheme Works         |
| 058/33 | [REDACTED] | Scheme Works         |
| 058/34 | [REDACTED] | Scheme Works         |
| 058/35 | [REDACTED] | Scheme Works         |
| 058/36 | [REDACTED] | Scheme Works         |
| 058/37 | [REDACTED] | *Accommodation Works |
| 058/38 | [REDACTED] | Scheme Works         |
| 058/39 | [REDACTED] | Scheme Works         |



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**Appendix 1/15: Accommodation Works**

|        |            |              |
|--------|------------|--------------|
| 058/40 | [REDACTED] | Scheme Works |
|--------|------------|--------------|

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/059/01&02 Rev.3                                                                     |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | [REDACTED]                        |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 59/01                                                                                                                           | [REDACTED].         | *Accommodation Works              |
| 59/02                                                                                                                           | [REDACTED]          | *Accommodation Works              |
| 59/03                                                                                                                           | [REDACTED]          | Scheme Works                      |
| 59/04                                                                                                                           | [REDACTED]          | *Accommodation Works              |
| 59/05                                                                                                                           | [REDACTED]          | Scheme Works                      |
| 59/06                                                                                                                           | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|       |            |                      |
|-------|------------|----------------------|
|       |            |                      |
| 59/07 | [REDACTED] | *Accommodation Works |
| 59/08 | [REDACTED] | Scheme Works         |
| 59/09 | [REDACTED] | *Accommodation Works |
| 59/10 | [REDACTED] | Scheme Works         |
| 59/11 | [REDACTED] | Scheme Works         |
| 59/12 | [REDACTED] | *Accommodation Works |
| 59/13 | [REDACTED] | *Accommodation Works |
| 59/14 | [REDACTED] | *Accommodation Works |
| 59/15 | [REDACTED] | *Accommodation Works |

## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|       |            |                      |
|-------|------------|----------------------|
| 59/16 | [REDACTED] | *Accommodation Works |
| 59/17 | [REDACTED] | *Accommodation Works |
| 59/18 | [REDACTED] | *Accommodation Works |
| 59/19 | [REDACTED] | *Accommodation Works |
| 59/20 | [REDACTED] | *Accommodation Works |
| 59/21 | [REDACTED] | *Accommodation Works |
| 59/22 | [REDACTED] | Scheme Works         |
| 59/23 | [REDACTED] | *Accommodation Works |
| 59/24 | [REDACTED] | *Accommodation Works |
| 59/25 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|       |            |                      |
|-------|------------|----------------------|
|       |            |                      |
| 59/26 | [REDACTED] | *Accommodation Works |
| 59/27 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/061/01 Rev 2                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | [REDACTED]                        |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 061/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 061/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                                                                                                                                                                   |                 |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                                                                                                                                                                   |                 |
| <b>REFER TO DRAWING NUMBERS:</b> B10332/AW/063/01 Rev 3                                                                         |                                                                                                                                                                                   |                 |
| <b>OWNER(S):</b>                                                                                                                | <b>OCCUPIER(S):</b>                                                                                                                                                               |                 |
| The Scottish Ministers<br>Victoria Quay<br>Edinburgh<br>EH6 6QQ                                                                 | Owner                                                                                                                                                                             |                 |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                                                                                                                                                                   |                 |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>                                                                                                                                                               | <b>Comments</b> |
| 63/01                                                                                                                           | Provide approximately 35 linear metres of badger and otter proof fencing to drawing number B1033200/SD/300/F2 Option B. To be tied into existing boundary treatment at both ends. | Scheme Works    |
| 63/02                                                                                                                           | Septic tank and associated pipework to be relocated if impacted upon by the works                                                                                                 | Scheme Works    |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |              |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBERS:</b> 10332/AW/065/01 Rev 2 and 10332/AW/065/02 Rev 2                                                |              |                                   |
| <b>OWNER(S):</b>                                                                                                                |              | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |              | [REDACTED]                        |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |              |                                   |
| Ref No.                                                                                                                         | Requirements | Comments                          |
| 065/01                                                                                                                          | [REDACTED]   | *Accommodation Works              |
| 065/02                                                                                                                          | [REDACTED]   | *Accommodation Works              |
| 065/03                                                                                                                          | [REDACTED]   | *Accommodation Works              |
| 065/04                                                                                                                          | [REDACTED]   | *Accommodation Works              |
| 065/05                                                                                                                          | [REDACTED]   | *Accommodation Works              |



**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        | treatment. |                      |
| 065/06 | [REDACTED] | *Accommodation Works |
| 065/07 | [REDACTED] | *Accommodation Works |
| 065/08 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                 |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------|
| <b>REFER TO DRAWING NUMBERS: B10332/AW/066/01 Rev 1</b>                                                                         |                                   |                 |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                 |
| [REDACTED]                                                                                                                      | Owner                             |                 |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                 |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b> |
| 66/01                                                                                                                           | [REDACTED]                        | Scheme Works    |
| 66/02                                                                                                                           | [REDACTED]                        | Scheme Works    |
| 66/03                                                                                                                           | [REDACTED]                        | Scheme Works    |
| 66/04                                                                                                                           | [REDACTED]                        | Scheme Works    |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                                   |
| <p><b>REFER TO DRAWING NUMBER:</b> B1033200/AW/069/01 Rev 2</p>                                                                        |                                   |
| <b>OWNER(S):</b>                                                                                                                       | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             | [REDACTED]                        |

**Appendix 1/15: Accommodation Works**

| <b>LIST OF WORKS REQUIRED</b> |                     |                      |
|-------------------------------|---------------------|----------------------|
| <b>Ref No.</b>                | <b>Requirements</b> | <b>Comments</b>      |
| 69/01                         | [REDACTED]          | *Accommodation Works |
| 69/02                         | [REDACTED]          | *Accommodation Works |
| 69/03                         | [REDACTED]          | *Accommodation Works |
| 69/04                         | [REDACTED]          | Scheme Works         |

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**Appendix 1/15: Accommodation Works**

|       |            |                      |
|-------|------------|----------------------|
|       |            |                      |
| 69/05 | [REDACTED] | Scheme Works         |
| 69/06 | [REDACTED] | Scheme Works         |
| 69/07 | [REDACTED] | *Accommodation Works |
| 69/08 | [REDACTED] | Scheme Works         |
| 69/09 | [REDACTED] | Scheme Works         |
| 69/10 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/100/01 Rev 2                                                                       |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | [REDACTED]                        |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 100/01                                                                                                                          | [REDACTED]                        | Scheme Works         |
| 100/02                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 100/03                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 100/04                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 100/05                                                                                                                          | [REDACTED]                        | Scheme Works         |
| 100/06                                                                                                                          | [REDACTED]                        | Scheme Works         |

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**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 100/07 | [REDACTED] | *Accommodation Works |
| 100/08 | [REDACTED] | *Accommodation Works |
| 100/09 | [REDACTED] | *Accommodation Works |
| 100/10 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> 10332/AW/101/01 Rev 2, 10332/AW/101/02 Rev 2, 10332/AW/101/03 Rev 2, 10332/AW/101/04 Rev 3      |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 101/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 101/02                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 101/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 101/04                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 101/05                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 101/06                                                                                                                          | [REDACTED]          | *Accommodation Works              |



**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 101/07 | [REDACTED] | *Accommodation Works |
| 101/08 | [REDACTED] | *Accommodation Works |
| 101/09 | [REDACTED] | *Accommodation Works |
| 101/10 | [REDACTED] | *Accommodation Works |
| 101/11 | [REDACTED] | Scheme Works         |
| 101/12 | [REDACTED] | *Accommodation Works |
| 101/13 | [REDACTED] | Scheme Works         |
| 101/14 | [REDACTED] | Scheme Works         |
| 101/15 | [REDACTED] | *Accommodation Works |
| 101/16 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 101/17 | [REDACTED] | Scheme Works         |
| 101/18 | [REDACTED] | *Accommodation Works |
| 101/19 | [REDACTED] | *Accommodation Works |
| 101/20 | [REDACTED] | *Accommodation Works |
| 101/21 | [REDACTED] | *Accommodation Works |
| 101/22 | [REDACTED] | *Accommodation Works |
| 101/23 | [REDACTED] | *Accommodation Works |
| 101/24 | [REDACTED] | *Accommodation Works |
| 101/25 | [REDACTED] | *Accommodation Works |
| 101/26 | [REDACTED] | *Accommodation Works |
| 101/27 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 101/28 | [REDACTED] | *Accommodation Works |
| 101/29 | [REDACTED] | *Accommodation Works |
| 101/30 | [REDACTED] | *Accommodation Works |
| 101/31 | [REDACTED] | *Accommodation Works |
| 101/32 | [REDACTED] | *Accommodation Works |
| 101/33 | [REDACTED] | *Accommodation Works |
| 101/34 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
| <b>REFER TO DRAWING NUMBER: B1033200/AW/103/01&amp;02 Rev 2</b>                                                                 |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 103/01                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 103/02                                                                                                                          | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 103/03 | [REDACTED] | *Accommodation Works |
| 103/04 | [REDACTED] | *Accommodation Works |
| 103/05 | [REDACTED] | *Accommodation Works |
| 103/06 | [REDACTED] | Scheme Works         |
| 103/07 | [REDACTED] | Scheme Works         |
| 103/08 | [REDACTED] | *Accommodation Works |
| 103/09 | [REDACTED] | Scheme Works         |
| 103/10 | [REDACTED] | Scheme Works         |
| 103/11 | [REDACTED] | *Accommodation Works |
| 103/12 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 103/13 | [REDACTED] | *Accommodation Works |
| 103/14 | [REDACTED] | *Accommodation Works |
| 103/15 | [REDACTED] | *Accommodation Works |
| 103/16 | [REDACTED] | *Accommodation Works |
| 103/17 | [REDACTED] | *Accommodation Works |
| 103/18 | [REDACTED] | *Accommodation Works |
| 103/19 | [REDACTED] | *Accommodation Works |
| 103/20 | [REDACTED] | *Accommodation Works |
| 103/21 | [REDACTED] | Scheme Works         |
| 103/22 | [REDACTED] | Scheme Works         |
| 103/23 | [REDACTED] | Scheme Works         |
| 103/24 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 103/25 | [REDACTED] | Scheme Works         |
| 103/26 | [REDACTED] | *Accommodation Works |
| 103/27 | [REDACTED] | Scheme Works         |
| 103/28 | [REDACTED] | Scheme Works         |
| 103/29 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/104/01 Rev 2                                                                        |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | 1. Owner                          |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 104/01                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 104/02                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 104/03                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 104/04                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 104/05                                                                                                                          | [REDACTED]                        | *Accommodation Works |



**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>REFER TO DRAWING NUMBER: B1033200/AW/105/01 Rev 2</b>                                                                        |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 105/01                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 105/02                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 105/03                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 105/04                                                                                                                          | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 105/05 | [REDACTED] | *Accommodation Works |
| 105/06 | [REDACTED] | Scheme Works         |
| 105/07 | [REDACTED] | *Accommodation Works |
| 105/08 | [REDACTED] | *Accommodation Works |
| 105/09 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                                          |                        |
|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                                          |                        |
| <p><b>REFER TO DRAWING NUMBER: B1033200/AW/108/01 Rev 1</b></p>                                                                        |                                          |                        |
| <p><b>OWNER(S):</b></p>                                                                                                                | <p><b>LESSEE(S) AND OCCUPIER(S):</b></p> |                        |
| <p>[REDACTED]</p>                                                                                                                      | <p>[REDACTED]</p>                        |                        |
| <p><b>LIST OF WORKS REQUIRED</b></p>                                                                                                   |                                          |                        |
| <p><b>Ref No.</b></p>                                                                                                                  | <p><b>Requirements</b></p>               | <p><b>Comments</b></p> |
| <p>108/01</p>                                                                                                                          | <p>[REDACTED]</p>                        | <p>Scheme Works</p>    |
| <p>108/02</p>                                                                                                                          | <p>[REDACTED]</p>                        | <p>Scheme Works</p>    |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 108/03 | [REDACTED] | Scheme Works         |
| 108/04 | [REDACTED] | Scheme Works         |
| 108/05 | [REDACTED] | *Accommodation Works |
| 108/06 | [REDACTED] | *Accommodation Works |
| 108/07 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> 1033200/AW/115/01 Rev. 1                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 115/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 115/02                                                                                                                          | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/116/01 Rev 1                                                                        |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | [REDACTED]                        |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 116/01                                                                                                                          | [REDACTED]                        | Scheme Works         |
| 116/02                                                                                                                          | [REDACTED]                        | Scheme Works         |
| 116/03                                                                                                                          | [REDACTED]                        | Scheme Works         |
| 116/04                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 116/05                                                                                                                          | [REDACTED]                        | Scheme Works         |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>REFER TO DRAWING NUMBER:</b> 10332/AW/206/01 Rev 2                                                                           |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| Ref No.                                                                                                                         | Requirements                      | Comments             |
| 206/01                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 206/02                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 206/03                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 206/04                                                                                                                          | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/209/01 Rev 1                                                                        |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 209/01                                                                                                                          | [REDACTED]                        | *Accommodation Works |



**Appendix 1/15: Accommodation Works**

|        |            |                                    |
|--------|------------|------------------------------------|
| 209/02 | [REDACTED] | *Accommodation Works               |
| 209/03 | [REDACTED] | *Accommodation Works               |
| 209/04 | [REDACTED] | Scheme Works & Accommodation Works |
| 209/05 | [REDACTED] | Scheme Works & Accommodation Works |
| 209/06 | [REDACTED] | *Accommodation Works               |
| 209/07 | [REDACTED] | *Accommodation Works               |
| 209/08 | [REDACTED] | Scheme Works & Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBERS:</b> B10332/AW/210A/01 Rev 0                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owner                             |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 210A/01                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 210A/02                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 210A/03                                                                                                                         | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBERS: B10332/AW/210B/01 Rev 0</b>                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owner                             |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 210B/01                                                                                                                         | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                                                      |                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE</b></p> <p><b>SPECIAL ROAD SCHEME</b></p> <p><b>SCHEDULE A:</b></p> <p><b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                                          |
| <p><b>REFER TO DRAWING NUMBER:</b> 10332/AW/211/01 Rev 2</p>                                                                                                         |                                          |
| <p><b>OWNER(S):</b></p>                                                                                                                                              | <p><b>LESSEE(S) AND OCCUPIER(S):</b></p> |
| <p>[REDACTED]</p>                                                                                                                                                    | <p>[REDACTED]</p>                        |

**Appendix 1/15: Accommodation Works**

| <b>LIST OF WORKS REQUIRED</b> |                     |                 |
|-------------------------------|---------------------|-----------------|
| <b>Ref No.</b>                | <b>Requirements</b> | <b>Comments</b> |
| 211/01                        | [REDACTED]          | Scheme Works    |
| 211/02                        | [REDACTED]          | Scheme Works    |
| 211/03                        | [REDACTED]          | Scheme Works    |
| 211/04                        | [REDACTED]          | Scheme Works    |
| 211/05                        | [REDACTED]          | Scheme Works    |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 211/06 | [REDACTED] | *Accommodation Works |
| 211/07 | [REDACTED] | *Accommodation Works |
| 211/08 | [REDACTED] | Scheme Works         |
| 211/09 | [REDACTED] | *Accommodation Works |
| 211/10 | [REDACTED] | *Accommodation Works |
| 211/11 | [REDACTED] | *Accommodation Works |
| 211/12 | [REDACTED] | *Accommodation Works |
| 211/13 | [REDACTED] | *Accommodation Works |
| 211/14 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|        |             |                      |
|--------|-------------|----------------------|
| 211/15 | [REDACTED]k | *Accommodation Works |
| 211/16 | [REDACTED]  | *Accommodation Works |
| 211/17 | [REDACTED]  | *Accommodation Works |
| 211/18 | [REDACTED]  | *Accommodation Works |
| 211/19 | [REDACTED]  | Scheme Works         |
| 211/20 | [REDACTED]  | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                                          |                        |
|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                                          |                        |
| <p><b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/214A/01 Rev 0</p>                                                                      |                                          |                        |
| <p><b>OWNER(S):</b></p>                                                                                                                | <p><b>LESSEE(S) AND OCCUPIER(S):</b></p> |                        |
| <p>[REDACTED]</p>                                                                                                                      | <p>Owner</p>                             |                        |
| <p><b>LIST OF WORKS REQUIRED</b></p>                                                                                                   |                                          |                        |
| <p><b>Ref No.</b></p>                                                                                                                  | <p><b>Requirements</b></p>               | <p><b>Comments</b></p> |
| <p>214A/01</p>                                                                                                                         | <p>[REDACTED]</p>                        | <p>Scheme Works</p>    |



**Appendix 1/15: Accommodation Works**

|         |            |                      |
|---------|------------|----------------------|
| 214A/02 | [REDACTED] | Scheme Works         |
| 214A/03 | [REDACTED] | *Accommodation Works |
| 214A/04 | [REDACTED] | Scheme Works         |
| 214A/05 | [REDACTED] | *Accommodation Works |
| 214A/06 | [REDACTED] | Scheme Works         |
| 214A/07 | [REDACTED] | *Accommodation Works |
| 214A/08 | [REDACTED] | Scheme Works         |
| 214A/09 | [REDACTED] | *Accommodation Works |
| 214A/10 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/214B/01 Rev 1                                                                      |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owner                             |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 214B/01                                                                                                                         | [REDACTED]          | Scheme Works                      |
| 214B/02                                                                                                                         | [REDACTED]          | Scheme Works                      |
| 214B/03                                                                                                                         | [REDACTED]          | Scheme Works                      |
| 214B/04                                                                                                                         | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                                                      |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE</b></p> <p><b>SPECIAL ROAD SCHEME</b></p> <p><b>SCHEDULE A:</b></p> <p><b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                                   |
| <p><b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/214C/01 Rev 1 &amp; B1033200/AW/214C/02 Rev 1</p>                                                                    |                                   |
| <b>OWNER(S):</b>                                                                                                                                                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                                                           | [REDACTED]                        |

**Appendix 1/15: Accommodation Works**

| <b>LIST OF WORKS REQUIRED</b> |              |                      |
|-------------------------------|--------------|----------------------|
| Ref No.                       | Requirements | Comments             |
| 214C/01                       | [REDACTED]   | *Accommodation Works |
| 214C/02                       | [REDACTED]   | *Accommodation Works |
| 214C/03                       | [REDACTED]   | *Accommodation Works |
| 214C/04                       | [REDACTED]   | *Accommodation Works |
| 214C/05                       | [REDACTED]   | *Accommodation Works |
| 214C/06                       | [REDACTED]   | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |              |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/217/01 Rev 2                                                                        |              |                                   |
| <b>OWNER(S):</b>                                                                                                                |              | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |              | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |              |                                   |
| Ref No.                                                                                                                         | Requirements | Comments                          |
| 217/01                                                                                                                          | [REDACTED]   | Scheme Works                      |
| 217/02                                                                                                                          | [REDACTED]   | *Accommodation Works              |
| 217/03                                                                                                                          | [REDACTED]   | *Accommodation Works              |
| 217/04                                                                                                                          | [REDACTED]   | *Accommodation Works              |
| 217/05                                                                                                                          | [REDACTED]   | *Accommodation Works              |
| 217/06                                                                                                                          | [REDACTED]   | *Accommodation Works              |
| 217/07                                                                                                                          | [REDACTED]   | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 217/08 | [REDACTED] | Scheme Works         |
| 217/09 | [REDACTED] | *Accommodation Works |
| 217/10 | [REDACTED] | *Accommodation Works |
| 217/11 | [REDACTED] | *Accommodation Works |
| 217/12 | [REDACTED] | *Accommodation Works |
| 217/13 | [REDACTED] | *Accommodation Works |
| 217/14 | [REDACTED] | *Accommodation Works |
| 217/15 | [REDACTED] | *Accommodation Works |
| 217/16 | [REDACTED] | *Accommodation Works |
| 217/17 | [REDACTED] | *Accommodation       |

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**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            | Works                |
| 217/18 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/223/01 Rev 3                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| The Scottish Ministers<br>Victoria Quay<br>Edinburgh<br>EH6 6QQ                                                                 |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 223/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 223/02                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 223/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 223/04                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 223/05                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 223/06                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 223/07                                                                                                                          | [REDACTED]          | *Accommodation Works              |



**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 223/08 | [REDACTED] | *Accommodation Works |
| 223/09 | [REDACTED] | *Accommodation Works |
| 223/10 | [REDACTED] | *Accommodation Works |
| 223/11 | [REDACTED] | *Accommodation Works |
| 223/12 | [REDACTED] | *Accommodation Works |
| 223/13 | [REDACTED] | *Accommodation Works |
| 223/14 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/228/01 Rev 4                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     |                                   |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 228/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 228/02                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 228/03                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 228/04                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 228/05                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 228/06 | [REDACTED] | *Accommodation Works |
| 228/07 | [REDACTED] | *Accommodation Works |
| 228/08 | [REDACTED] | *Accommodation Works |
| 228/09 | [REDACTED] | Scheme Works         |
| 228/10 | [REDACTED] | Scheme Works         |
| 228/11 | [REDACTED] | *Accommodation Works |
| 228/12 | [REDACTED] | *Accommodation Works |
| 228/13 | [REDACTED] | *Accommodation Works |
| 228/14 | [REDACTED] | *Accommodation Works |
| 228/15 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                      |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/229/01 Rev 3                                                                        |                     |                      |
| <b>OWNER:</b>                                                                                                                   | <b>OCCUPIER:</b>    |                      |
| [REDACTED]                                                                                                                      | Owner               |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>      |
| 229/01                                                                                                                          | [REDACTED]          | *Accommodation Works |
| 229/02                                                                                                                          | [REDACTED]          | Scheme Works         |
| 229/03                                                                                                                          | [REDACTED]          | *Accommodation Works |
| 229/04                                                                                                                          | [REDACTED]          | *Accommodation Works |
| 229/05                                                                                                                          | [REDACTED]          | Scheme Works         |
| 229/06                                                                                                                          | [REDACTED]          | *Accommodation Works |
| 229/07                                                                                                                          | [REDACTED]          | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 229/08 | [REDACTED] | *Accommodation Works |
| 229/09 | [REDACTED] | *Accommodation Works |
| 229/10 | [REDACTED] | Scheme Works         |
| 229/11 | [REDACTED] | *Accommodation Works |
| 229/12 | [REDACTED] | Scheme Works         |
| 229/13 | [REDACTED] | Scheme Works         |
| 229/14 | [REDACTED] | *Accommodation Works |
| 229/15 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/230/01 Rev.3                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 230/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 230/02                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 230/03                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 230/04                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 230/05                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 230/06                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 230/07 | [REDACTED] | *Accommodation Works |
| 230/08 | [REDACTED] | *Accommodation Works |
| 230/09 | [REDACTED] | *Accommodation Works |
| 230/10 | [REDACTED] | *Accommodation Works |
| 230/11 | [REDACTED] | *Accommodation Works |
| 230/12 | [REDACTED] | *Accommodation Works |
| 230/13 | [REDACTED] | *Accommodation Works |
| 230/14 | [REDACTED] | *Accommodation Works |
| 230/15 | [REDACTED] | *Accommodation Works |
| 230/16 | [REDACTED] | Scheme Works         |
| 230/17 | [REDACTED] | *Accommodation Works |
| 230/18 | [REDACTED] | *Accommodation Works |

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**Appendix 1/15: Accommodation Works**

|        |            |              |
|--------|------------|--------------|
|        |            |              |
| 230/19 | [REDACTED] | Scheme Works |
| 230/20 | [REDACTED] | Scheme Works |
| 230/21 | [REDACTED] | Scheme Works |
| 230/22 | [REDACTED] | Scheme Works |
| 230/23 | [REDACTED] | Scheme Works |



**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/233/01 Rev 2                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     |                                   |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 233/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 233/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 233/03                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 233/04                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 233/05                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 233/06                                                                                                                          | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 233/07 | [REDACTED] | *Accommodation Works |
| 233/08 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                                                                                                                                                                                                                                                   |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> 10332/AW/250/01 Rev 1 & 10332/AW/250/02 Rev 1                                                   |                                                                                                                                                                                                                                                                   |                                   |
| <b>OWNER(S):</b>                                                                                                                |                                                                                                                                                                                                                                                                   | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| Forestry Commission<br>Silvan House<br>231 Corstorphine Road<br>Edinburgh<br>AH12 7AT                                           |                                                                                                                                                                                                                                                                   | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                                                                                                                                                                                                                                                   |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>                                                                                                                                                                                                                                               | <b>Comments</b>                   |
| 250/01                                                                                                                          | Provide approximately 110 linear metres of badger proof fencing to drawing number B1033200/SD/300/F2 Option C. Southern end to be tied into existing boundary treatment and the northern end to be tied into fence provided in works ref 250/02.                  | Scheme Works                      |
| 250/02                                                                                                                          | Provide approximately 25 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. Southern end to be tied into fence provided in works ref 250/01 and northern end to be tied into fence provided in works ref 250/03.         | *Accommodation Works              |
| 250/03                                                                                                                          | Provide approximately 170 linear metres of badger proof fencing to drawing number B1033200/SD/300/F2 Option C. Southern end to be tied into fence provided in works ref 250/02 and the northern end to be tied into fence provided in works ref 250/04.           | Scheme Works                      |
| 250/04                                                                                                                          | Provide approximately 335 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. Southern end to be tied into fence provided in works ref 250/03 and northern end to be tied into existing boundary treatment.               | *Accommodation Works              |
| 250/05                                                                                                                          | Provide approximately 175 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. Southern western end to be tied into existing boundary treatment and north eastern end to be tied into fence provided in works ref 250/06.  | *Accommodation Works              |
| 250/06                                                                                                                          | Provide approximately 205 linear metres of badger and otter proof fencing to drawing number B1033200/SD/300/F2 Option B. Southern end to be tied into fence provided in works ref 250/05 and the northern end to be tied into fence provided in works ref 250/07. | Scheme Works                      |

## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|         |                                                                                                                                                                                                                                                                     |                      |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| 250/07  | Provide approximately 200 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. Eastern end to be tied into fence provided in works ref 250/06 and western end to terminate at edge of CPO boundary.                          | *Accommodation Works |
| 250/08  | Provide approximately 260 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. South western end to begin at edge of CPO boundary and north eastern end to be tied into end of Bogenjoss footpath.                           | *Accommodation Works |
| 250/09  | Provide approximately 240 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. Southern end to begin at end of Bogenjoss footpath and northern end to be tied into opposite end of the Bogenjoss footpath.                   | *Accommodation Works |
| 250/010 | Provide approximately 185 linear metres of badger and otter proof fencing to drawing number B1033200/SD/300/F2 Option B. Northern end to be tied into existing boundary treatment and the southern end to be tied into fence provided in works ref 250/011.         | Scheme Works         |
| 250/011 | Provide approximately 105 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. Western end to be tied into fence provided in works ref 250/010 and eastern end to be tied into existing boundary treatment.                  | *Accommodation Works |
| 250/012 | Provide approximately 115 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. Western end to be tied into fence provided in works ref 250/013 and eastern end to be tied into existing boundary treatment.                  | *Accommodation Works |
| 250/013 | Provide approximately 130 linear metres of badger and otter proof fencing to drawing number B1033200/SD/300/F2 Option B. Northern end to be tied into fence provided in works ref 250/012 and the southern end to be tied into fence provided in works ref 250/014. | Scheme Works         |
| 250/014 | Provide approximately 90 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. North western end to be tied into fence provided in works ref 250/013 and south eastern end to be tied into existing boundary treatment.       | *Accommodation Works |
| 250/015 | Provide approximately 35 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. To be tied into existing boundary treatment at both ends.                                                                                      | *Accommodation Works |
| 250/016 | Provide approximately 85 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. To be tied into existing boundary treatment at both ends.                                                                                      | *Accommodation Works |
| 250/017 | Provide approximately 340 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. Western end to be tied into existing boundary treatment                                                                                       | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|         |                                                                                                                                                                                                                                                                     |                      |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
|         | and eastern end to be tied into fence provided in works ref 250/018.                                                                                                                                                                                                |                      |
| 250/018 | Provide approximately 250 linear metres of badger and otter proof fencing to drawing number B1033200/SD/300/F2 Option B. Northern end to be tied into fence provided in works ref 250/017 and the southern end to be tied into fence provided in works ref 250/019. | Scheme Works         |
| 250/019 | Provide approximately 160 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. Northern end to be tied into fence provided in works ref 250/018 and southern end to be tied into existing boundary treatment.                | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                                                                                                                                                                                                                                                            |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER: 10332/AW/253/01 Rev 1</b>                                                                           |                                                                                                                                                                                                                                                                            |                                   |
| <b>OWNER(S):</b>                                                                                                                |                                                                                                                                                                                                                                                                            | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| Forestry Commission<br>Silvan House<br>231 Corstorphine Road<br>Edinburgh<br>AH12 7AT                                           |                                                                                                                                                                                                                                                                            | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                                                                                                                                                                                                                                                            |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>                                                                                                                                                                                                                                                        | <b>Comments</b>                   |
| 253/01                                                                                                                          | Provide approximately 125 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. Northern end to be tied into existing boundary treatment and southern end to be tied into wall provided in works ref 253/02.                         | *Accommodation Works              |
| 253/02                                                                                                                          | Provide approximately 42 linear metres of drystone wall to drawing number B1033200/SD/300/W1 Option D. Eastern end to be tied into edge of new access road and western end to be tied into fence provided in work ref 253/01.                                              | *Accommodation Works              |
| 253/03                                                                                                                          | Provide approximately 110 linear metres of drystone wall to drawing number B1033200/SD/300/W1 Option D. Western end to be tied into edge of new access road and eastern end to be tied into existing boundary treatment.                                                   | *Accommodation Works              |
| 253/04                                                                                                                          | Provide approximately 30 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. Northern end to be tied into existing boundary treatment and southern end to be tied into fence provided in work ref 253/05.                          | *Accommodation Works              |
| 253/05                                                                                                                          | Provide approximately 210 linear metres of badger and otter proof fencing to drawing number B1033200/SD/300/F2 Option B. Northern end to be tied into the fence provided in Works Ref. 253/04 and the southern end to be tied into the fence provided in works ref 253/06. | Scheme Works                      |
| 253/06                                                                                                                          | Provide approximately 45 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. Eastern end to be tied into existing boundary treatment and western end to be tied into fence provided in work ref 253/05.                            | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                                                                                                                                                                                                                                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                                                                                                                                                                                                                                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/279/01 Rev 1                                                                        |                                                                                                                                                                                                                                                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                                                                                                                                                                                                                                                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| The Scottish Ministers<br>Victoria Quay<br>Edinburgh<br>EH6 6QQ                                                                 |                                                                                                                                                                                                                                                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                                                                                                                                                                                                                                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>                                                                                                                                                                                                                                 | <b>Comments</b>                   |
| 279/01                                                                                                                          | Provide approximately 15 linear metres of post and 5 rail fence to drawing number B1033200/SD/300/F1. Western end to be tied into existing boundary treatment and eastern end to be tied into fence provided in works ref. 279/02.                  | *Accommodation Works              |
| 279/02                                                                                                                          | Provide approximately 85 linear metres of badger and otter proof fencing to drawing number B1033200/SD/300/F2 Option B. Western end to be tied into fence provided in works ref 279/01 and eastern end to be tied into existing boundary treatment. | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

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|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> 10332/AW/282/01 Rev 2                                                                           |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 282/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 282/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 282/03                                                                                                                          | [REDACTED]          | Scheme Works                      |



**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| REFER TO DRAWING NUMBER: 10332/AW/284/01 Rev 1                                                                                  |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 284/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 284/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER: 10332/AW/287/01 Rev 1</b>                                                                           |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 287/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |

## Appendix 1/15: Accommodation Works

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| REFER TO DRAWING NUMBER: B1033200/AW/288/01 Rev 3                                                                               |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 288/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 288/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                     |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                     |                                   |
| <p><b>REFER TO DRAWING NUMBER:</b> 10332/AW/289/01 Rev 1</p>                                                                           |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                       |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             |                     | [REDACTED]                        |
| <p><b>LIST OF WORKS REQUIRED</b></p>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                         | <b>Requirements</b> | <b>Comments</b>                   |
| 289/01                                                                                                                                 | [REDACTED]          | Scheme Works                      |
| 289/02                                                                                                                                 | [REDACTED]          | *Accommodation Works              |
| 289/03                                                                                                                                 | [REDACTED]          | *Accommodation Works              |

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**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 289/04 | [REDACTED] | *Accommodation Works |
| 289/05 | [REDACTED] | *Accommodation Works |
| 289/06 | [REDACTED] | Scheme Works         |
| 289/07 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER: B1033200/AW/292/01 Rev 2 &amp; 02 Rev.3</b>                                                         |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 292/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 292/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 292/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 292/04                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 292/05                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 292/06                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 292/07                                                                                                                          | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 292/08 | [REDACTED] | *Accommodation Works |
| 292/09 | [REDACTED] | Scheme Works         |
| 292/10 | [REDACTED] | *Accommodation Works |
| 292/11 | [REDACTED] | *Accommodation Works |
| 292/12 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/302/01 Rev 1                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 302/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 302/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |



## Appendix 1/15: Accommodation Works

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| REFER TO DRAWING NUMBER: B1033200/AW/322/01 Rev 2                                                                               |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 322/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 322/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBERS:</b> B10332/AW/323/01 Rev 2                                                                         |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owner                             |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 323/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 323/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 323/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                     |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                     |                                   |
| <p><b>REFER TO DRAWING NUMBER:</b> B1033200/AW/329/01 Rev 1</p>                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                       |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             |                     | Owners                            |
| <p><b>LIST OF WORKS REQUIRED</b></p>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                         | <b>Requirements</b> | <b>Comments</b>                   |
| 329/01                                                                                                                                 | [REDACTED]          | *Accommodation Works              |

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**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 329/02 | [REDACTED] | *Accommodation Works |
| 329/03 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/333/01 Rev 3, B1033200/AW/333/02 Rev 3                                              |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 333/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 333/02                                                                                                                          | [REDACTED].         | *Accommodation Works              |
| 333/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 333/04                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 333/05                                                                                                                          | [REDACTED]          | *Accommodation Works              |

## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 333/06 | [REDACTED] | *Accommodation Works |
| 333/07 | [REDACTED] | *Accommodation Works |
| 333/08 | [REDACTED] | *Accommodation Works |
| 333/09 | [REDACTED] | *Accommodation Works |
| 333/10 | [REDACTED] | *Accommodation Works |
| 333/11 | [REDACTED] | *Accommodation Works |
| 333/12 | [REDACTED] | *Accommodation Works |
| 333/13 | [REDACTED] | Scheme Works         |
| 333/14 | [REDACTED] | *Accommodation Works |
| 333/15 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 333/16 | [REDACTED] | *Accommodation Works |
| 333/17 | [REDACTED] | *Accommodation Works |
| 333/18 | [REDACTED] | *Accommodation Works |
| 333/19 | [REDACTED] | *Accommodation Works |
| 333/20 | [REDACTED] | *Accommodation Works |
| 333/21 | [REDACTED] | *Accommodation Works |
| 333/22 | [REDACTED] | *Accommodation Works |
| 333/23 | [REDACTED] | *Accommodation Works |
| 333/24 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 333/25 | [REDACTED] | *Accommodation Works |
| 333/26 | [REDACTED] | *Accommodation Works |
| 333/27 | [REDACTED] | *Accommodation Works |
| 333/28 | [REDACTED] | *Accommodation Works |
| 333/29 | [REDACTED] | *Accommodation Works |
| 333/30 | [REDACTED] | Scheme Works         |
| 333/31 | [REDACTED] | Scheme Works         |
| 333/32 | [REDACTED] | Scheme Works         |



**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/334/01 Rev 3                                                                       |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owner                             |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 334/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 334/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 334/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 334/04                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 334/05                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 334/06                                                                                                                          | [REDACTED]          | *Accommodation Works              |

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**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 334/07 | [REDACTED] | *Accommodation Works |
| 334/08 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                            |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                            |
| <b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/348/01 Rev 2                                                                       |                     |                                            |
| <b>OWNER(S):</b><br>[REDACTED]                                                                                                  |                     | <b>LESSEE(S) AND OCCUPIER(S):</b><br>Owner |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                            |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                            |
| 348/01                                                                                                                          | [REDACTED]          | *Accommodation Works                       |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                      |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                      |
| REFER TO DRAWING NUMBER: B1033200/AW/349/01 Rev 3                                                                               |                     |                      |
| <b>OWNER:</b>                                                                                                                   |                     | <b>OCCUPIER:</b>     |
| [REDACTED]                                                                                                                      |                     | [REDACTED]           |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>      |
| 349/01                                                                                                                          | [REDACTED]          | *Accommodation Works |
| 349/02                                                                                                                          | [REDACTED]          | *Accommodation Works |
| 349/03                                                                                                                          | [REDACTED]          | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                     |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                     |                                   |
| <p><b>REFER TO DRAWING NUMBER: B1033200/AW/350/01 Rev 1</b></p>                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                       |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             |                     | Owners                            |
| <p><b>LIST OF WORKS REQUIRED</b></p>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                         | <b>Requirements</b> | <b>Comments</b>                   |
| 350/01                                                                                                                                 | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER: B1033200/AW/352/01 Rev.2</b>                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 352/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 352/02                                                                                                                          | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER: B1033200/AW/384/01 Rev 1</b>                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 384/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER: B1033200/AW/386/01 Rev 1</b>                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 386/01                                                                                                                          | [REDACTED]          | Scheme Works                      |



**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |              |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/415/01 Rev 2                                                                        |              |                                   |
| <b>OWNER(S):</b>                                                                                                                |              | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |              | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |              |                                   |
| Ref No.                                                                                                                         | Requirements | Comments                          |
| 415/01                                                                                                                          | [REDACTED]   | Scheme works                      |
| 415/02                                                                                                                          | [REDACTED]   | *Accommodation works              |
| 415/03                                                                                                                          | [REDACTED]   | Scheme works                      |
| 415/04                                                                                                                          | [REDACTED]   | *Accommodation works              |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B10332/AW/416/01 Rev 2                                                                          |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 416/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 416/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 416/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 416/04                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 416/05                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 416/06                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 416/07                                                                                                                          | [REDACTED]          | Scheme Works                      |

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**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 416/08 | [REDACTED] | *Accommodation Works |
| 416/09 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |              |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/417/01 Rev 3 & B1033200/AW/417/02 Rev 3                                             |              |                                   |
| <b>OWNER(S):</b>                                                                                                                |              | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |              | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |              |                                   |
| Ref No.                                                                                                                         | Requirements | Comments                          |
| 417/01                                                                                                                          | [REDACTED]   | *Accommodation Works              |
| 417/02                                                                                                                          | [REDACTED]   | *Accommodation Works              |
| 417/03                                                                                                                          | [REDACTED]   | *Accommodation Works              |
| 417/04                                                                                                                          | [REDACTED]   | *Accommodation Works              |
| 417/05                                                                                                                          | [REDACTED]   | *Accommodation Works              |
| 417/06                                                                                                                          | [REDACTED]   | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 417/07 | [REDACTED] | *Accommodation Works |
| 417/08 | [REDACTED] | *Accommodation Works |
| 417/09 | [REDACTED] | *Accommodation Works |
| 417/10 | [REDACTED] | *Accommodation Works |
| 417/11 | [REDACTED] | Scheme Works         |
| 417/12 | [REDACTED] | Scheme Works         |
| 417/13 | [REDACTED] | Scheme Works         |
| 417/14 | [REDACTED] | Scheme Works         |
| 417/15 | [REDACTED] | *Accommodation Works |
| 417/16 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 417/17 | [REDACTED] | *Accommodation Works |
| 417/18 | [REDACTED] | Scheme Works         |
| 417/19 | [REDACTED] | Scheme Works         |
| 417/20 | [REDACTED] | Scheme Works         |
| 417/21 | [REDACTED] | *Accommodation Works |
| 417/22 | [REDACTED] | *Accommodation Works |
| 417/23 | [REDACTED] | *Accommodation Works |
| 417/24 | [REDACTED] | *Accommodation Works |
| 417/25 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 417/26 | [REDACTED] | *Accommodation Works |
| 417/27 | [REDACTED] | *Accommodation Works |
| 417/28 | [REDACTED] | *Accommodation Works |
| 417/29 | [REDACTED] | *Accommodation Works |
| 417/30 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>REFER TO DRAWING NUMBERS: B1033200/AW/430/01 Rev 2</b>                                                                       |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owner                             |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 430/01                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 430/02                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 430/03                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 430/04                                                                                                                          | [REDACTED]                        | *Accommodation Works |



**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/432A/01 Rev 0                                                                      |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owner                             |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 432A/01                                                                                                                         | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/438/01&02 Rev. 3                                                                    |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 438/01                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 438/02                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 438/03                                                                                                                          | [REDACTED]                        | Scheme Works         |
| 438/04                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 438/05                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 438/06                                                                                                                          | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 438/07 | [REDACTED] | *Accommodation Works |
| 438/08 | [REDACTED] | *Accommodation Works |
| 438/09 | [REDACTED] | Scheme Works         |
| 438/10 | [REDACTED] | *Accommodation Works |
| 438/11 | [REDACTED] | *Accommodation Works |
| 438/12 | [REDACTED] | *Accommodation Works |
| 438/13 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER: B1033200/AW/442/01 Rev 1</b>                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 442/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 442/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> 10332/AW/443/01 Rev 2                                                                           |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 443/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 443/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 443/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 443/04                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 443/05                                                                                                                          | [REDACTED]          | *Scheme Works                     |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/444/01 Rev 1                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 444/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 444/02                                                                                                                          | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/445/01 Rev 2                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 445/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 445/02                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 445/03                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 445/04                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 445/05                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 445/06                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                 |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------|
| <b>REFER TO DRAWING NUMBER:</b> 10332/AW/447/01 Rev 1                                                                           |                                   |                 |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                 |
| [REDACTED]                                                                                                                      | Owners                            |                 |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                 |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b> |
| 447/01                                                                                                                          | [REDACTED]                        | Scheme Works    |
| 447/02                                                                                                                          | [REDACTED]                        | Scheme Works    |
| 447/03                                                                                                                          | [REDACTED]                        | Scheme Works    |
| 447/04                                                                                                                          | [REDACTED]                        | Scheme Works    |
| 447/05                                                                                                                          | [REDACTED]                        | Scheme Works    |
| 447/06                                                                                                                          | [REDACTED]                        | Scheme Works    |



**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |              |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/460/01 Rev 2                                                                        |              |                                   |
| <b>OWNER(S):</b>                                                                                                                |              | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |              | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |              |                                   |
| Ref No.                                                                                                                         | Requirements | Comments                          |
| 460/01                                                                                                                          | [REDACTED]   | *Accommodation Works              |
| 460/02                                                                                                                          | [REDACTED]   | *Accommodation Works              |
| 460/03                                                                                                                          | [REDACTED]   | *Accommodation Works              |
| 460/04                                                                                                                          | [REDACTED]   | *Accommodation Works              |
| 460/05                                                                                                                          | [REDACTED]   | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                     |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                     |
| <p><b>REFER TO DRAWING NUMBER:</b> B1033200/AW/466/01 Rev 2</p>                                                                        |                     |
| <b>OWNER(S):</b>                                                                                                                       | <b>OCCUPIER(S):</b> |
| <p>[REDACTED]</p>                                                                                                                      | <p>[REDACTED]</p>   |

**Appendix 1/15: Accommodation Works**

| <b>LIST OF WORKS REQUIRED</b> |                     |                 |
|-------------------------------|---------------------|-----------------|
| <b>Ref No.</b>                | <b>Requirements</b> | <b>Comments</b> |
| 466/01                        | [REDACTED]          | Scheme Works    |
| 466/02                        | [REDACTED]          | Scheme Works    |
| 466/03                        | [REDACTED]          | Scheme Works    |
| 466/04                        | [REDACTED]          | Scheme Works    |
| 466/05                        | [REDACTED]          | Scheme Works    |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/467/01 Rev 2                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owner                             |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 467/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 467/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                                   |
| <p><b>REFER TO DRAWING NUMBER:</b> B1033200/AW/471/01 Rev 2</p>                                                                        |                                   |
| <b>OWNER(S):</b>                                                                                                                       | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             | [REDACTED]                        |

**Appendix 1/15: Accommodation Works**

| <b>LIST OF WORKS REQUIRED</b> |              |               |
|-------------------------------|--------------|---------------|
| Ref No.                       | Requirements | Comments      |
| 471/01                        | [REDACTED]   | Scheme Works  |
| 471/02                        | [REDACTED]   | *Scheme Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/473/01 Rev 2                                                                        |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| Ref No.                                                                                                                         | Requirements                      | Comments             |
| 473/01                                                                                                                          | [REDACTED]                        | Scheme Works         |
| 473/02                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 473/03                                                                                                                          | [REDACTED]                        | Scheme Works         |
| 473/04                                                                                                                          | [REDACTED]                        | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 473/05 | [REDACTED] | *Accommodation Works |
| 473/06 | [REDACTED] | Scheme Works         |
| 473/07 | [REDACTED] | *Accommodation Works |
| 473/08 | [REDACTED] | Scheme Works         |
| 473/09 | [REDACTED] | *Accommodation Works |
| 473/10 | [REDACTED] | *Accommodation Works |
| 473/11 | [REDACTED] | *Accommodation Works |
| 473/12 | [REDACTED] | Scheme Works         |
| 473/13 | [REDACTED] | *Accommodation Works |
| 473/14 | [REDACTED] | Scheme Works         |



**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/477/01 Rev 2                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 477/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 477/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 477/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 477/04                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER: B1033200/AW/478/01 Rev 2</b>                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 478/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/481/01 Rev 2                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 481/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 481/02                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 481/03                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 481/04                                                                                                                          | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                 |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                 |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/483/01 Rev 3                                                                        |                                   |                 |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                 |
| [REDACTED]                                                                                                                      | Owners                            |                 |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                 |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b> |
| 483/01                                                                                                                          | [REDACTED]                        | Scheme Works    |
| 483/02                                                                                                                          | [REDACTED]                        | Scheme Works    |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/484/01 Rev 3                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 484/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 484/02                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 484/03                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 484/04                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 484/05                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 484/06                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 484/07                                                                                                                          | [REDACTED]          | Scheme Works                      |

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**Appendix 1/15: Accommodation Works**

|        |            |              |
|--------|------------|--------------|
|        |            |              |
| 484/08 | [REDACTED] | Scheme Works |
| 484/09 | [REDACTED] | Scheme Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/486/01 Rev 3                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 486/01                                                                                                                          | [REDACTED]          | *Accommodation works              |
| 486/02                                                                                                                          | [REDACTED]          | Scheme works                      |
| 486/03                                                                                                                          | [REDACTED]          | Scheme works                      |
| 486/04                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 486/05                                                                                                                          | [REDACTED]          | Scheme works                      |
| 486/06                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 486/07                                                                                                                          | [REDACTED]          | Scheme works                      |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 486/08 | [REDACTED] | *Accommodation Works |
| 486/09 | [REDACTED] | Scheme works         |
| 486/10 | [REDACTED] | *Accommodation Works |
| 486/11 | [REDACTED] | Scheme works         |
| 486/12 | [REDACTED] | *Accommodation Works |
| 486/13 | [REDACTED] | *Accommodation Works |
| 486/14 | [REDACTED] | *Accommodation Works |
| 486/15 | [REDACTED] | *Scheme Works        |
| 486/16 | [REDACTED] | *Accommodation Works |



**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                      |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|
| <b>REFER TO DRAWING NUMBER: B1033200/AW/510/01 Rev 2 &amp; B1033200/AW/510/02 Rev 2</b>                                         |                     |                      |
| <b>OWNER:</b>                                                                                                                   | <b>OCCUPIER:</b>    |                      |
| [REDACTED]                                                                                                                      | Owner               |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>      |
| 510/01                                                                                                                          | [REDACTED]          | Scheme Works         |
| 510/02                                                                                                                          | [REDACTED]          | *Accommodation Works |
| 510/03                                                                                                                          | [REDACTED]          | *Accommodation Works |
| 510/04                                                                                                                          | [REDACTED]          | *Accommodation Works |
| 510/05                                                                                                                          | [REDACTED]          | Scheme Works         |
| 510/06                                                                                                                          | [REDACTED]          | *Accommodation Works |
| 510/07                                                                                                                          | [REDACTED]          | *Accommodation       |

**Appendix 1/15: Accommodation Works**

|        |             |                      |
|--------|-------------|----------------------|
|        |             | Works                |
| 510/08 | [REDACTED]  | *Accommodation Works |
| 510/09 | [REDACTED]  | *Accommodation Works |
| 510/10 | [REDACTED]  | Scheme Works         |
| 510/11 | [REDACTED]  | Scheme Works         |
| 510/12 | [REDACTED]  | *Accommodation Works |
| 510/13 | [REDACTED]  | Scheme Works         |
| 510/14 | [REDACTED]  | Scheme Works         |
| 510/15 | [REDACTED]. | *Accommodation Works |
| 510/16 | [REDACTED]  | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                                                      |                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE</b></p> <p><b>SPECIAL ROAD SCHEME</b></p> <p><b>SCHEDULE A:</b></p> <p><b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                         |
| <p><b>REFER TO DRAWING NUMBER:</b> B1033200/AW/515/01 Rev 2, B1033200/AW/515/02 Rev 2, B1033200/AW/515/03 Rev 3 and B1033200/AW/515/04 Rev 3</p>                     |                         |
| <p><b>OWNER:</b></p>                                                                                                                                                 | <p><b>OCCUPIER:</b></p> |
| <p>[REDACTED]</p>                                                                                                                                                    | <p>[REDACTED]</p>       |
| <p><b>LIST OF WORKS REQUIRED</b></p>                                                                                                                                 |                         |

**Appendix 1/15: Accommodation Works**

| <b>Ref No.</b> | <b>Requirements</b> | <b>Comments</b>                    |
|----------------|---------------------|------------------------------------|
| 515/01         | [REDACTED]          | *Accommodation Works               |
| 515/02         | [REDACTED]          | *Accommodation Works               |
| 515/03         | [REDACTED]          | Scheme Works & Accommodation Works |
| 515/04         | [REDACTED]          | Scheme Works & Accommodation Works |
| 515/05         | [REDACTED]          | *Accommodation Works               |
| 515/06         | [REDACTED]          | *Accommodation Works               |
| 515/07         | [REDACTED].         | *Accommodation Works               |
| 515/08         | [REDACTED]          | *Accommodation Works               |
| 515/09         | [REDACTED]          | *Scheme Works                      |
| 515/10         | [REDACTED]          | *Accommodation Works               |

**Appendix 1/15: Accommodation Works**

|        |            |                                    |
|--------|------------|------------------------------------|
|        |            |                                    |
| 515/11 | [REDACTED] | *Accommodation Works               |
| 515/12 | [REDACTED] | *Accommodation Works               |
| 515/13 | [REDACTED] | *Accommodation Works               |
| 515/14 | [REDACTED] | *Accommodation Works               |
| 515/15 | [REDACTED] | *Accommodation Works               |
| 515/16 | [REDACTED] | *Accommodation Works               |
| 515/17 | [REDACTED] | *Accommodation Works               |
| 515/18 | [REDACTED] | *Accommodation Works               |
| 515/19 | [REDACTED] | Scheme Works & Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                     |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                     |                                   |
| <p><b>REFER TO DRAWING NUMBER:</b> B1033200/AW/518/01 Rev 1</p>                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                       |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             |                     |                                   |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                          |                     |                                   |
| <b>Ref No.</b>                                                                                                                         | <b>Requirements</b> | <b>Comments</b>                   |
| 518/01                                                                                                                                 | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/520A/01 Rev 1                                                                       |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 520A/01                                                                                                                         | [REDACTED]                        | Scheme Works         |
| 520A/02                                                                                                                         | [REDACTED]                        | Scheme Works         |
| 520A/03                                                                                                                         | [REDACTED]                        | *Accommodation Works |
| 520A/04                                                                                                                         | [REDACTED]                        | *Accommodation Works |
| 520A/05                                                                                                                         | [REDACTED]                        | *Accommodation Works |

## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|         |            |                      |
|---------|------------|----------------------|
| 520A/06 | [REDACTED] | *Accommodation Works |
| 520A/07 | [REDACTED] | *Accommodation Works |
| 520A/08 | [REDACTED] | *Accommodation Works |
| 520A/09 | [REDACTED] | Scheme Works         |
| 520A/10 | [REDACTED] | Scheme Works         |
| 520A/11 | [REDACTED] | Scheme Works         |
| 520A/12 | [REDACTED] | *Accommodation Works |
| 520A/13 | [REDACTED] | *Accommodation Works |
| 520A/14 | [REDACTED] | *Accommodation Works |



**Appendix 1/15: Accommodation Works**

|         |            |                      |
|---------|------------|----------------------|
| 520A/15 | [REDACTED] | *Accommodation Works |
| 520A/16 | [REDACTED] | *Accommodation Works |
| 520A/17 | [REDACTED] | *Accommodation Works |
| 520A/18 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                 |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                 |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/520B/01 Rev 1                                                                       |                                   |                 |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                 |
| [REDACTED]                                                                                                                      | Owners                            |                 |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                 |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b> |
| 520B/01                                                                                                                         | [REDACTED]                        | Scheme Works    |
| 520B/02                                                                                                                         | [REDACTED]                        | Scheme Works    |
| 520B/03                                                                                                                         | [REDACTED]                        | Scheme Works    |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                 |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/522/01&02 Rev 1                                                                     |                                   |                 |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                 |
| [REDACTED]                                                                                                                      | Owners                            |                 |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                 |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b> |
| 522/01                                                                                                                          | [REDACTED]                        | Scheme Works    |
| 522/02                                                                                                                          | [REDACTED]                        | Scheme Works    |
| 522/03                                                                                                                          | [REDACTED]                        | Scheme Works    |
| 522/04                                                                                                                          | [REDACTED]                        | Scheme Works    |
| 522/05                                                                                                                          | [REDACTED]                        | Scheme Works    |
| 522/06                                                                                                                          | [REDACTED]                        | Scheme Works    |

**Appendix 1/15: Accommodation Works**

|        |            |              |
|--------|------------|--------------|
|        |            |              |
| 522/07 | [REDACTED] | Scheme Works |
| 522/08 | [REDACTED] | Scheme Works |
| 522/09 | [REDACTED] | Scheme Works |
| 522/10 | [REDACTED] | Scheme Works |
| 522/11 | [REDACTED] | Scheme Works |
| 522/12 | [REDACTED] | Scheme Works |
| 522/13 | [REDACTED] | Scheme Works |
| 522/14 | [REDACTED] | Scheme Works |
| 522/15 | [REDACTED] | Scheme Works |
| 522/16 | [REDACTED] | Scheme Works |

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**Appendix 1/15: Accommodation Works**

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**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/535/01 Rev 3                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 535/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 535/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 535/03                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 535/04                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 535/05                                                                                                                          | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 535/06 | [REDACTED] | Scheme Works         |
| 535/07 | [REDACTED] | *Accommodation Works |
| 535/08 | [REDACTED] | Scheme Works         |
| 535/09 | [REDACTED] | *Accommodation Works |
| 535/10 | [REDACTED] | Scheme Works         |
| 535/11 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/536/01 Rev 2                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owner.                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 536/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 536/02                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 536/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |



**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                                   |
| <p><b>REFER TO DRAWING NUMBER:</b> B1033200/AW/543/01 Rev 1, B1033200/AW/543/02 Rev 1 and B1033200/AW/543/03 Rev 1</p>                 |                                   |
| <b>OWNER(S):</b>                                                                                                                       | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             | [REDACTED]                        |

**Appendix 1/15: Accommodation Works**

| <b>LIST OF WORKS REQUIRED</b> |                     |                      |
|-------------------------------|---------------------|----------------------|
| <b>Ref No.</b>                | <b>Requirements</b> | <b>Comments</b>      |
| 543/01                        | [REDACTED]          | *Accommodation Works |
| 543/02                        | [REDACTED]          | Scheme Works         |
| 543/03                        | [REDACTED]          | Scheme Works         |
| 543/04                        | [REDACTED]          | *Accommodation Works |
| 543/05                        | [REDACTED]          | *Accommodation Works |
| 543/06                        | [REDACTED]          | *Accommodation Works |
| 543/07                        | [REDACTED]          | *Accommodation Works |
| 543/08                        | [REDACTED]          | *Accommodation Works |
| 543/09                        | [REDACTED]          | *Accommodation Works |
| 543/10                        | [REDACTED]          | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 543/11 | [REDACTED] | Scheme Works         |
| 543/12 | [REDACTED] | Scheme Works         |
| 543/13 | [REDACTED] | *Accommodation Works |
| 543/14 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                                   |
| <p><b>REFER TO DRAWING NUMBER: B1033200/AW/551/01 Rev 2</b></p>                                                                        |                                   |
| <b>OWNER(S):</b>                                                                                                                       | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             | [REDACTED]                        |

**Appendix 1/15: Accommodation Works**

| <b>LIST OF WORKS REQUIRED</b> |                     |                      |
|-------------------------------|---------------------|----------------------|
| <b>Ref No.</b>                | <b>Requirements</b> | <b>Comments</b>      |
| 551/01                        | [REDACTED]          | *Accommodation Works |
| 551/02                        | [REDACTED]          | *Accommodation Works |
| 551/03                        | [REDACTED]          | *Accommodation Works |
| 551/04                        | [REDACTED]          | *Accommodation Works |
| 551/05                        | [REDACTED]          | Scheme Works         |
| 551/06                        | [REDACTED]          | *Accommodation Works |
| 551/07                        | [REDACTED]          | Scheme Works         |
| 551/08                        | [REDACTED]          | *Accommodation Works |
| 551/09                        | [REDACTED]          | Scheme Works         |

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**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 551/10 | [REDACTED] | *Accommodation Works |
| 551/11 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/553/01 Rev 4                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 553/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 553/02                                                                                                                          | [REDACTED].         | *Accommodation Works              |
| 553/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 553/04                                                                                                                          | [REDACTED]          | Accommodation Works               |
| 553/05                                                                                                                          | [REDACTED]          | Accommodation Works               |
| 553/06                                                                                                                          | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 553/07 | [REDACTED] | *Accommodation Works |
| 553/08 | [REDACTED] | *Accommodation Works |
| 553/09 | [REDACTED] | *Accommodation Works |
| 553/10 | [REDACTED] | *Accommodation Works |
| 553/11 | [REDACTED] | Scheme Works         |
| 553/12 | [REDACTED] | *Accommodation Works |
| 553/13 | [REDACTED] | *Accommodation Works |
| 553/14 | [REDACTED] | Scheme Works         |
| 553/15 | [REDACTED] | *Accommodation Works |



**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/555/01 Rev 1                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 555/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 555/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 555/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 555/04                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 555/05                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 555/06                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>REFER TO DRAWING NUMBER: B1033200/AW/556/01&amp;02&amp;03 Rev.2</b>                                                          |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 556/01                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 556/02                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 556/03                                                                                                                          | [REDACTED]                        | Scheme Works         |
| 556/04                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 556/05                                                                                                                          | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 556/06 | [REDACTED] | *Accommodation Works |
| 556/07 | [REDACTED] | *Accommodation Works |
| 556/08 | [REDACTED] | *Accommodation Works |
| 556/09 | [REDACTED] | *Accommodation Works |
| 556/10 | [REDACTED] | *Accommodation Works |
| 556/11 | [REDACTED] | *Accommodation Works |
| 556/12 | [REDACTED] | *Accommodation Works |
| 556/13 | [REDACTED] | *Accommodation Works |
| 556/14 | [REDACTED] | *Accommodation Works |
| 556/15 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 556/16 | [REDACTED] | *Accommodation Works |
| 556/17 | [REDACTED] | Scheme Works         |
| 556/18 | [REDACTED] | *Accommodation Works |
| 556/19 | [REDACTED] | *Accommodation Works |
| 556/20 | [REDACTED] | *Accommodation Works |
| 556/21 | [REDACTED] | *Accommodation Works |
| 556/22 | [REDACTED] | *Accommodation Works |
| 556/23 | [REDACTED] | *Accommodation Works |
| 556/24 | [REDACTED] | *Accommodation       |

**Appendix 1/15: Accommodation Works**

|        |             |                      |
|--------|-------------|----------------------|
|        |             | Works                |
| 556/25 | [REDACTED]  | *Accommodation Works |
| 556/26 | [REDACTED]  | *Accommodation Works |
| 556/27 | [REDACTED]  | *Accommodation Works |
| 556/28 | [REDACTED]  | *Accommodation Works |
| 556/29 | [REDACTED]  | Scheme Works         |
| 556/30 | [REDACTED]. | Scheme Works         |
| 556/31 | [REDACTED]  | Scheme Works         |
| 556/32 | [REDACTED]  | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 556/33 | [REDACTED] | *Accommodation Works |
| 556/34 | [REDACTED] | *Accommodation Works |
| 556/35 | [REDACTED] | Scheme Works         |
| 556/36 | [REDACTED] | *Accommodation Works |
| 556/37 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/556B/01 Rev 2                                                                       |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 556B/01                                                                                                                         | [REDACTED]                        | *Accommodation Works |
| 556B/02                                                                                                                         | [REDACTED]                        | *Accommodation Works |
| 556B/03                                                                                                                         | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                     |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                     |                                   |
| <p><b>REFER TO DRAWING NUMBER:</b> B1033200/AW/557/01 Rev 2</p>                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                       |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                          |                     |                                   |
| <b>Ref No.</b>                                                                                                                         | <b>Requirements</b> | <b>Comments</b>                   |
| 557/01                                                                                                                                 | [REDACTED]          | Scheme Works                      |
| 557/02                                                                                                                                 | [REDACTED]          | *Accommodation Works              |
| 557/03                                                                                                                                 | [REDACTED]          | *Accommodation Works              |
| 557/04                                                                                                                                 | [REDACTED]          | *Accommodation Works              |



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**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 557/05 | [REDACTED] | *Accommodation Works |
| 557/06 | [REDACTED] | Scheme Works         |
| 557/07 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/561/01 Rev 2                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owner                             |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 561/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 561/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 561/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                 |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                 |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/565/01 Rev 3                                                                        |                                   |                 |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                 |
| [REDACTED]                                                                                                                      | Owners                            |                 |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                 |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b> |
| 565/01                                                                                                                          | [REDACTED]                        | Scheme Works    |
| 565/02                                                                                                                          | [REDACTED]                        | Scheme Works    |
| 565/03                                                                                                                          | [REDACTED]                        | Scheme Works    |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                                                                                                                                                                                                                                           |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/566/01 Rev 1                                                                        |                                                                                                                                                                                                                                                           |                                   |
| <b>OWNER(S):</b>                                                                                                                |                                                                                                                                                                                                                                                           | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| The Scottish Ministers<br>Victoria Quay<br>Edinburgh<br>EH6 6QQ                                                                 |                                                                                                                                                                                                                                                           | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                                                                                                                                                                                                                                           |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>                                                                                                                                                                                                                                       | <b>Comments</b>                   |
| 566/01                                                                                                                          | Provide approximately 105 linear metres of badger and otter proof fencing to drawing number B1033200/SD/300/F2 Option B. Northern end to be tied into existing boundary treatment and southern end to be tied into fence provided in works ref 566/02.    | Scheme Works                      |
| 566/02                                                                                                                          | Provide approximately 100 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. Northern end to be tied into fence provided in works ref 566/01 and southern end to be tied into gate provided in works ref 566/03. | *Accommodation Works              |
| 566/03                                                                                                                          | Provide 1 No. 3.6 metre single steel field gate to drawing no. B1033200/SD/300/G1 Option A. Northern end to be tied into fence provided in works ref 566/02 and southern end to be tied into existing boundary treatment.                                 | *Accommodation Works              |
| 566/04                                                                                                                          | Provide approximately 205 linear metres of badger and otter proof fencing to drawing number B1033200/SD/300/F2 Option B. To be tied into existing boundary treatment at both ends.                                                                        | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/569/01 Rev 1                                                                       |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owner                             |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 569/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/578/01 Rev 2                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 578/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 578/02                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 578/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                     |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                     |                                   |
| <p><b>REFER TO DRAWING NUMBER:</b> 10332/AW/580/01 Rev 2</p>                                                                           |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                       |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                          |                     |                                   |
| <b>Ref No.</b>                                                                                                                         | <b>Requirements</b> | <b>Comments</b>                   |
| 580/01                                                                                                                                 | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/584/01 Rev 1                                                                       |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owner                             |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 584/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 584/02                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 584/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 584/04                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 584/05                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 584/06                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 584/07                                                                                                                          | [REDACTED]          | Scheme Works                      |



**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER: B1033200/AW/587/01 Rev 3</b>                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 587/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 587/02                                                                                                                          | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                                                                                                                                                                 |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> 10332/AW/590/01 Rev 1                                                                           |                                                                                                                                                                                 |                                   |
| <b>OWNER(S):</b>                                                                                                                |                                                                                                                                                                                 | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| Forestry Commission<br>Silvan House<br>231 Corstorphine Road<br>Edinburgh<br>AH12 7AT                                           |                                                                                                                                                                                 | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                                                                                                                                                                 |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>                                                                                                                                                             | <b>Comments</b>                   |
| 590/01                                                                                                                          | Provide approximately 100 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. To be tied into existing boundary treatment at both ends. | *Accommodation Works              |
| 590/02                                                                                                                          | Provide approximately 90 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. To be tied into existing boundary treatment at both ends.  | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                     |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                     |                                   |
| <p><b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/593/01 Rev.1</p>                                                                       |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                       |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                          |                     |                                   |
| <b>Ref No.</b>                                                                                                                         | <b>Requirements</b> | <b>Comments</b>                   |
| 593/01                                                                                                                                 | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
| <b>REFER TO DRAWING NUMBER: B1033200/AW/597/01 Rev.2</b>                                                                        |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 597/01                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 597/02                                                                                                                          | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                                                                                                                                                                                                                                            |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/610/01 Rev 2                                                                       |                                                                                                                                                                                                                                                            |                                   |
| <b>OWNER(S):</b>                                                                                                                |                                                                                                                                                                                                                                                            | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| The Scottish Ministers<br>Victoria Quay<br>Edinburgh<br>EH6 6QQ                                                                 |                                                                                                                                                                                                                                                            | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                                                                                                                                                                                                                                            |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>                                                                                                                                                                                                                                        | <b>Comments</b>                   |
| 610/01                                                                                                                          | Provide approximately 135 linear metres of post and 5 barbed wire fence to drawing number B1033200/SD/300/F3 Option A. To be tied into existing boundary treatments at both ends.                                                                          | *Accommodation Works              |
| 610/02                                                                                                                          | Provide 1No. 3.6m wide single steel field gate to drawing number B1033200/SD/300/G1 Option A. To be tied into fences provided in works refs. 610/01 and 610/03.                                                                                            | *Accommodation Works              |
| 610/03                                                                                                                          | Provide approximately 265 linear metres of post and 5 barbed wire fence to drawing number B1033200/SD/300/F3 Option A. Northern end to be tied into gate provided in works ref 610/02 and southern end to be tied into fence provided in works ref 610/04. | *Accommodation Works              |
| 610/04                                                                                                                          | Provide approximately 85 linear metres of badger and otter proof fencing to drawing number B1033200/SD/300/F2 Option B. Eastern end to be tied into fence provided in works ref. 610/03 and western end to be tied into existing boundary treatment.       | Scheme Works                      |
| 610/05                                                                                                                          | Provide approximately 105 linear metres of post and 5 barbed wire fence to drawing number B1033200/SD/300/F3 Option A. To be tied into existing boundary treatments at both ends.                                                                          | *Accommodation Works              |
| 610/06                                                                                                                          | Provide approximately 205 lineal metres of badger and otter proof fencing to drawing number B103322/SD/300/F2 Option B. To be tied into the existing boundary treatment at both ends.                                                                      | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                     |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                     |                                   |
| <p><b>REFER TO DRAWING NUMBER:</b> B1033200/AW/612/01 Rev 2</p>                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                       |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                          |                     |                                   |
| <b>Ref No.</b>                                                                                                                         | <b>Requirements</b> | <b>Comments</b>                   |
| 612/01                                                                                                                                 | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                                                                                                                                                                    |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                                                                                                                                                                    |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/617/01 Rev 1                                                                        |                                                                                                                                                                                    |                                   |
| <b>OWNER(S):</b>                                                                                                                |                                                                                                                                                                                    | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| The Scottish Ministers<br>Victoria Quay<br>Edinburgh<br>EH6 6QQ                                                                 |                                                                                                                                                                                    | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                                                                                                                                                                    |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>                                                                                                                                                                | <b>Comments</b>                   |
| 617/01                                                                                                                          | Provide approximately 115 linear metres of badger and otter proof fencing to drawing number B1033200/SD/300/F2 Option B. To be tied into existing boundary treatment at both ends. | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/620/01&02 Rev 1                                                                     |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 620/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 620/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 620/03                                                                                                                          | [REDACTED]          | Scheme works                      |
| 6031/04                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 620/05                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 620/06                                                                                                                          | [REDACTED]          | *Accommodation Works              |



**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 620/07 | [REDACTED] | *Accommodation Works |
| 620/08 | [REDACTED] | *Accommodation Works |
| 620/09 | [REDACTED] | *Accommodation Works |
| 620/10 | [REDACTED] | *Accommodation Works |
| 620/11 | [REDACTED] | Scheme Works         |
| 620/12 | [REDACTED] | *Accommodation Works |
| 620/13 | [REDACTED] | *Accommodation Works |
| 620/14 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/623/01 Rev 1                                                                        |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 623/01                                                                                                                          | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/624/01 Rev 1                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 624/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 624/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 624/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 624/04                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 624/05                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 624/06                                                                                                                          | [REDACTED]          | *Accommodation Works              |

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**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 624/07 | [REDACTED] | *Accommodation Works |
| 624/08 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                     |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                     |                                   |
| <p><b>REFER TO DRAWING NUMBER:</b> B1033200/AW/626/01 Rev 2 &amp; B1033200/AW/626/02 Rev 2</p>                                         |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                       |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             |                     | [REDACTED]                        |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                          |                     |                                   |
| <b>Ref No.</b>                                                                                                                         | <b>Requirements</b> | <b>Comments</b>                   |
| 626/01                                                                                                                                 | [REDACTED]          | Scheme Works                      |
| 626/02                                                                                                                                 | [REDACTED]          | *Accommodation Works              |

## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|        |             |                      |
|--------|-------------|----------------------|
|        |             |                      |
| 626/03 | [REDACTED]  | Scheme Works         |
| 626/04 | [REDACTED]. | *Accommodation Works |
| 626/05 | [REDACTED]  | *Scheme Works        |
| 626/06 | [REDACTED]  | *Accommodation Works |
| 626/07 | [REDACTED]  | *Accommodation Works |
| 626/08 | [REDACTED]  | *Accommodation Works |
| 626/09 | [REDACTED]  | *Accommodation Works |
| 626/10 | [REDACTED]  | *Accommodation Works |
| 626/11 | [REDACTED]  | *Accommodation Works |
| 626/12 | [REDACTED]  | *Accommodation Works |

## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 626/13 | [REDACTED] | *Accommodation Works |
| 626/14 | [REDACTED] | *Accommodation Works |
| 626/15 | [REDACTED] | *Accommodation Works |
| 626/16 | [REDACTED] | *Accommodation Works |
| 626/17 | [REDACTED] | Scheme Works         |
| 626/18 | [REDACTED] | *Accommodation Works |
| 626/19 | [REDACTED] | *Accommodation Works |
| 626/20 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> 10332/AW/627/01 Rev 2, 10332/AW/627/02 Rev 2 & 10332/AW/627/03 Rev 2                            |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 627/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 627/02                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 627/03                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 627/04                                                                                                                          | [REDACTED]          | Scheme Works                      |



**Appendix 1/15: Accommodation Works**

|        |            |              |
|--------|------------|--------------|
|        | 627/05.    |              |
| 627/05 | [REDACTED] | Scheme Works |
| 627/06 | [REDACTED] | Scheme Works |
| 627/07 | [REDACTED] | Scheme Works |
| 627/08 | [REDACTED] | Scheme Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                     |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                     |                                   |
| <p><b>REFER TO DRAWING NUMBER:</b> B1033200/AW/629/01 Rev 5, B1033200/AW/629/02 Rev 5 &amp; B1033200/AW/629/03 Rev 4</p>               |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                       |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                          |                     |                                   |
| <b>Ref No.</b>                                                                                                                         | <b>Requirements</b> | <b>Comments</b>                   |
| 629/01                                                                                                                                 | [REDACTED]          | *Accommodation Works              |
| 629/02                                                                                                                                 | [REDACTED]          | *Accommodation Works              |
| 629/03                                                                                                                                 | [REDACTED]          | *Accommodation Works              |
| 629/04                                                                                                                                 | [REDACTED]          | *Accommodation Works              |
| 629/05                                                                                                                                 | [REDACTED]          | *Accommodation Works              |
| 629/06                                                                                                                                 | [REDACTED]          | *Accommodation Works              |
| 629/07                                                                                                                                 | [REDACTED]          | *Accommodation                    |

## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            | Works                |
| 629/08 | [REDACTED] | *Scheme Works        |
| 629/09 | [REDACTED] | *Accommodation Works |
| 629/10 | [REDACTED] | *Accommodation Works |
| 629/11 | [REDACTED] | *Accommodation Works |
| 629/12 | [REDACTED] | *Accommodation Works |
| 629/13 | [REDACTED] | Scheme Works         |
| 629/14 | [REDACTED] | *Accommodation Works |
| 629/15 | [REDACTED] | *Accommodation Works |
| 629/16 | [REDACTED] | *Accommodation Works |
| 629/17 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 629/18 | [REDACTED] | Scheme Works         |
| 629/19 | [REDACTED] | *Accommodation Works |
| 629/20 | [REDACTED] | *Accommodation Works |
| 629/21 | [REDACTED] | *Accommodation Works |
| 629/22 | [REDACTED] | Scheme Works         |
| 629/23 | [REDACTED] | *Accommodation Works |
| 629/24 | [REDACTED] | *Accommodation Works |
| 629/25 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                                                                                                                                                                |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                                                                                                                                                                |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/631/01 Rev 2                                                                        |                                                                                                                                                                                |                                   |
| <b>OWNER(S):</b>                                                                                                                |                                                                                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| The Scottish Ministers<br>Victoria Quay<br>Edinburgh<br>EH6 6QQ                                                                 |                                                                                                                                                                                | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                                                                                                                                                                |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>                                                                                                                                                            | <b>Comments</b>                   |
| 631/01                                                                                                                          | Provide approximately 40 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. To be tied into existing boundary treatment at both ends. | *Accommodation Works              |
| 631/02                                                                                                                          | Existing septic tank and associated pipework to be relcoated to a suitable position outwith the Land Made Available but within the grounds of the property.                    | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/632/01 Rev 2 & 02 Rev 3                                                             |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 632/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 632/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 632/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 632/04                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 632/05                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 632/06                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 632/07                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 632/08 | [REDACTED] | *Accommodation Works |
| 632/09 | [REDACTED] | *Accommodation Works |
| 632/10 | [REDACTED] | *Accommodation Works |
| 632/11 | [REDACTED] | *Accommodation Works |
| 632/12 | [REDACTED] | *Accommodation Works |
| 632/13 | [REDACTED] | Scheme Works         |
| 632/14 | [REDACTED] | *Accommodation Works |
| 635/15 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/633/01&02 Rev 1                                                                     |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 633/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 633/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 633/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 633/04                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 633/05                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 633/06                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 633/07                                                                                                                          | [REDACTED]          | *Accommodation Works              |



## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 633/08 | [REDACTED] | *Accommodation Works |
| 633/09 | [REDACTED] | *Accommodation Works |
| 633/10 | [REDACTED] | *Accommodation Works |
| 633/11 | [REDACTED] | *Accommodation Works |
| 633/12 | [REDACTED] | *Accommodation Works |
| 633/13 | [REDACTED] | *Accommodation Works |
| 633/14 | [REDACTED] | *Accommodation Works |
| 633/15 | [REDACTED] | Scheme Works         |
| 633/16 | [REDACTED] | Scheme Works         |
| 633/17 | [REDACTED] | *Accommodation Works |
| 633/18 | [REDACTED] | *Accommodation       |

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**Appendix 1/15: Accommodation Works**

|  |  |       |
|--|--|-------|
|  |  | Works |
|--|--|-------|

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                     |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                     |                                   |
| <p><b>REFER TO DRAWING NUMBER:</b> B1033200/AW/634/01&amp;02 Rev.2</p>                                                                 |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                       |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                          |                     |                                   |
| <b>Ref No.</b>                                                                                                                         | <b>Requirements</b> | <b>Comments</b>                   |
| 634/01                                                                                                                                 | [REDACTED]          | Scheme Works                      |
| 634/02                                                                                                                                 | [REDACTED]          | *Accommodation Works              |
| 634/03                                                                                                                                 | [REDACTED]          | Scheme Works                      |
| 634/04                                                                                                                                 | [REDACTED]          | *Accommodation                    |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            | Works                |
| 634/05 | [REDACTED] | *Accommodation Works |
| 634/06 | [REDACTED] | *Accommodation Works |
| 634/07 | [REDACTED] | *Accommodation Works |
| 634/08 | [REDACTED] | Scheme Works         |
| 634/09 | [REDACTED] | *Accommodation Works |
| 634/10 | [REDACTED] | *Accommodation Works |
| 634/11 | [REDACTED] | *Accommodation Works |
| 634/12 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|        |             |                      |
|--------|-------------|----------------------|
|        |             |                      |
| 634/13 | [REDACTED]  | Scheme Works         |
| 634/14 | [REDACTED]  | *Accommodation Works |
| 634/15 | [REDACTED]  | Scheme Works         |
| 634/16 | [REDACTED]  | *Accommodation Works |
| 634/17 | [REDACTED]. | Scheme Works         |
| 634/18 | [REDACTED]. | *Accommodation Works |
| 634/19 | [REDACTED]  | *Accommodation Works |
| 634/20 | [REDACTED]  | *Accommodation Works |
| 634/21 | [REDACTED]  | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 634/22 | [REDACTED] | *Accommodation Works |
| 634/23 | [REDACTED] | *Accommodation Works |
| 634/24 | [REDACTED] | *Accommodation Works |
| 634/25 | [REDACTED] | *Accommodation Works |
| 634/26 | [REDACTED] | Scheme Works         |
| 634/27 | [REDACTED] | *Accommodation Works |
| 634/28 | [REDACTED] | *Accommodation Works |
| 634/29 | [REDACTED] | *Accommodation Works |
| 634/30 | [REDACTED] | *Accommodation Works |

## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
| 634/31 | [REDACTED] | *Accommodation Works |
| 634/32 | [REDACTED] | *Accommodation Works |
| 634/33 | [REDACTED] | *Accommodation Works |
| 634/34 | [REDACTED] | *Accommodation Works |
| 634/35 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/635/01 Rev 2                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 635/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 635/02                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 635/03                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 635/04                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 635/05                                                                                                                          | [REDACTED]          | *Accommodation Works              |



**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/636/01 Rev 2                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 636/01                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 636/02                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 636/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 636/04                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 636/05                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 636/06                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 636/07                                                                                                                          | [REDACTED]          | *Accommodation Works              |

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**Appendix 1/15: Accommodation Works**

|        |            |                      |
|--------|------------|----------------------|
|        |            |                      |
| 636/08 | [REDACTED] | *Accommodation Works |
| 636/09 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/639/01 Rev 1                                                                        |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 639/01                                                                                                                          | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/647/01 Rev 2                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 647/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 647/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 647/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/716/01 Rev 1                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 716/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 716/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 716/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/718/01 Rev 1                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 718/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 718/02                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 718/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 718/04                                                                                                                          | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/723/01 Rev 2                                                                       |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 723/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 723/02                                                                                                                          | [REDACTED]          | Scheme Works                      |
| 723/03                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 723/04                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 723/05                                                                                                                          | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B10332/AW/742/01 Rev 1                                                                          |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owner                             |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 742/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |
| 742/02                                                                                                                          | [REDACTED]          | *Accommodation Works              |



**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                                                                                                                                                                                                                                      |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/744/01 Rev 2                                                                        |                                                                                                                                                                                                                                                      |                                   |
| <b>OWNER(S):</b>                                                                                                                |                                                                                                                                                                                                                                                      | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| The Scottish Ministers<br>Victoria Quay<br>Edinburgh<br>EH6 6QQ                                                                 |                                                                                                                                                                                                                                                      | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                                                                                                                                                                                                                                      |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>                                                                                                                                                                                                                                  | <b>Comments</b>                   |
| 744/01                                                                                                                          | Provide approximately 340 linear metres of post and 5 wire (2 barbed) fence to drawing number B1033200/SD/300/F3 Option C. Western end to be tied into existing boundary treatment and eastern end to be tied into gate provided in works ref 744/02 | *Accommodation Works              |
| 744/03                                                                                                                          | Provide 1 No. 1.2 metre single timber wicket gate to drawing no. B1033200/SD/300/G5. To be tied into fence provided in works ref 744/01 and drystone wall provided as part of the APWR scheme works                                                  | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                                                                                                                                                                                                                                                                          |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                                                                                                                                                                                                                                                                          |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/748/01 Rev 2                                                                        |                                                                                                                                                                                                                                                                                          |                                   |
| <b>OWNER(S):</b>                                                                                                                |                                                                                                                                                                                                                                                                                          | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| The Scottish Ministers<br>Victoria Quay<br>Edinburgh<br>EH6 6QQ                                                                 |                                                                                                                                                                                                                                                                                          | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                                                                                                                                                                                                                                                                          |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>                                                                                                                                                                                                                                                                      | <b>Comments</b>                   |
| 748/01                                                                                                                          | Approximately 35 linear metres of stone and mortar wall 1.5m high on the new boundary to replicate the existing boundary treatment demolished as part of the works. New walls to be constructed by reusing the original wall materials where possible to maintain character of the area. | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
| <b>REFER TO DRAWING NUMBER: 1033200/AW/750/01 Rev 2</b>                                                                         |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 750/01                                                                                                                          | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                                                                                                                                                                       |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                                                                                                                                                                       |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/756/01 Rev 2                                                                        |                                                                                                                                                                                       |                                   |
| <b>OWNER(S):</b>                                                                                                                |                                                                                                                                                                                       | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| The Scottish Ministers<br>Victoria Quay<br>Edinburgh<br>EH6 6QQ                                                                 |                                                                                                                                                                                       | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                                                                                                                                                                       |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>                                                                                                                                                                   | <b>Comments</b>                   |
| 756/01                                                                                                                          | Provide approximately 55 linear metres of noise barrier in accordance with the requirements of the Environmental Statement. To be tied into existing boundary treatment at both ends. | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/759/01 Rev 1                                                                        |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 759/01                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 759/02                                                                                                                          | [REDACTED]                        | *Accommodation Works |
| 759/03                                                                                                                          | [REDACTED]                        | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/769/01 Rev 1                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 769/01                                                                                                                          | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                     |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                     |                                   |
| <p><b>REFER TO DRAWING NUMBER:</b> B1033200/AW/1288/01 Rev 2</p>                                                                       |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                       |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                          |                     |                                   |
| <b>Ref No.</b>                                                                                                                         | <b>Requirements</b> | <b>Comments</b>                   |
| 1288/01                                                                                                                                | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/1736/01 Rev 2                                                                      |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owner                             |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 1736/01                                                                                                                         | [REDACTED]          | Scheme Works                      |
| 1736/02                                                                                                                         | [REDACTED]          | Scheme Works                      |
| 1736/03                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 1736/04                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 1736/05                                                                                                                         | [REDACTED]          | Scheme Works                      |
| 1736/06                                                                                                                         | [REDACTED]          | Scheme Works                      |
| 1736/07                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 1736/08                                                                                                                         | [REDACTED]          | *Accommodation                    |



## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|         |              |                      |
|---------|--------------|----------------------|
|         |              | Works                |
| 1736/09 | [REDACTED]   | *Accommodation Works |
| 1736/10 | [REDACTED]   | *Accommodation Works |
| 1736/11 | [REDACTED]   | *Accommodation Works |
| 1736/12 | [REDACTED] . | *Accommodation Works |
| 1736/13 | [REDACTED]   | *Accommodation Works |
| 1736/14 | [REDACTED]   | *Accommodation Works |
| 1736/15 | [REDACTED]   | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                   |                     |                                   |
|-------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br>SPECIAL ROAD SCHEME<br>SCHEDULE A:<br>ACCOMMODATION WORKS & SCHEME WORKS |                     |                                   |
| REFER TO DRAWING NUMBER: B1033200/AW/5002/01 Rev 2                                                                |                     |                                   |
| <b>OWNER(S):</b>                                                                                                  |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                        |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                     |                     |                                   |
| <b>Ref No.</b>                                                                                                    | <b>Requirements</b> | <b>Comments</b>                   |
| 5002/01                                                                                                           | [REDACTED] .        | Scheme Works                      |
| 5002/02                                                                                                           | [REDACTED]          | *Accommodation Works              |
| 5002/03                                                                                                           | [REDACTED]          | Scheme Works                      |
| 5002/04                                                                                                           | [REDACTED]          | *Accommodation Works              |
| 5002/05                                                                                                           | [REDACTED]          | Scheme Works                      |
| 5002/06                                                                                                           | [REDACTED]          | *Accommodation Works              |

## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|         |            |                      |
|---------|------------|----------------------|
| 5002/07 | [REDACTED] | *Accommodation Works |
| 5002/08 | [REDACTED] | *Accommodation Works |
| 5002/09 | [REDACTED] | Scheme Works         |
| 5002/10 | [REDACTED] | *Accommodation Works |
| 5002/11 | [REDACTED] | *Accommodation Works |
| 5002/12 | [REDACTED] | *Accommodation Works |
| 5002/13 | [REDACTED] | *Accommodation Works |
| 5002/14 | [REDACTED] | Scheme Works         |
| 5002/15 | [REDACTED] | Scheme Works         |
| 5002/16 | [REDACTED] | *Accommodation Works |
| 5002/17 | [REDACTED] | *Accommodation Works |

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**Appendix 1/15: Accommodation Works**

|         |            |              |
|---------|------------|--------------|
|         |            |              |
| 5002/18 | [REDACTED] | Scheme Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/5003/01 Rev 2                                                                       |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 5003/01                                                                                                                         | [REDACTED]          | Scheme Works                      |
| 5003/02                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 5003/03                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 5003/04                                                                                                                         | [REDACTED]          | Scheme Works                      |
| 5003/05                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 5003/06                                                                                                                         | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                                                                                                                                                                                                                                                                                                                   |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/5005/01 Rev 2                                                                       |                                                                                                                                                                                                                                                                                                                                   |                                   |
| <b>OWNER(S):</b>                                                                                                                |                                                                                                                                                                                                                                                                                                                                   | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| The Scottish Ministers<br>Victoria Quay<br>Edinburgh<br>EH6 6QQ                                                                 |                                                                                                                                                                                                                                                                                                                                   | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                                                                                                                                                                                                                                                                                                                   |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>                                                                                                                                                                                                                                                                                                               | <b>Comments</b>                   |
| 5005/01                                                                                                                         | 45 linear metres of existing stone and mortar wall approx. 1.5m high to be replicated on the new boundary and tied into parapet of the new A93 overbridge.                                                                                                                                                                        | *Accommodation Works              |
| 5005/02                                                                                                                         | Provide approximately 65 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3B. Northern end to be tied into parapet of the new A93 Overbridge and the southern end to be tied into the existing boundary treatment.                                                                                 | *Accommodation Works              |
| 5005/03                                                                                                                         | Provide approximately 35 linear metres of post and 5 plain wire fence to drawing number B1033200/SD/300/F3 Option B. Western end to be tied into existing boundary treatment and eastern end to be tied into gate provided in works ref 5005/04.                                                                                  | *Accommodation Works              |
| 5005/04                                                                                                                         | Provide 1No. 3.6m single steel field gate to drawing number B1033200/SD/300/G1 Option A. Northern end to be tied into fence provided in works ref 5005/03 and southern end to be tied into existing boundary treatment.                                                                                                           | *Accommodation Works              |
| 5005/05                                                                                                                         | Provide approximately 35 linear metres of access track, 3.6 metres wide with a drop kerb access arrangement at the entrance onto the public road and an 11 metre square turning/parking area within the property boundary. Access track and parking area to be 300 millimetres thick type 1 sub-base to Specification Clause 803. | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                                                                                                                                                                                                                                                                                          |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                                                                                                                                                                                                                                                                                          |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/5137/01 Rev 2                                                                       |                                                                                                                                                                                                                                                                                                          |                                   |
| <b>OWNER(S):</b>                                                                                                                |                                                                                                                                                                                                                                                                                                          | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| The Scottish Ministers<br>Victoria Quay<br>Edinburgh<br>EH6 6QQ                                                                 |                                                                                                                                                                                                                                                                                                          | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                                                                                                                                                                                                                                                                                          |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>                                                                                                                                                                                                                                                                                      | <b>Comments</b>                   |
| 5137/01                                                                                                                         | Provide approximately 60 linear metres of stone and mortar wall approx. 1.5m high on the new boundary to replicate the existing boundary treatment demolished as part of the works. New walls to be constructed by reusing the original wall materials where possible to maintain character of the area. | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                                                                                                                                                                                                                                                                                          |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                                                                                                                                                                                                                                                                                          |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/5138/01 Rev 2                                                                       |                                                                                                                                                                                                                                                                                                          |                                   |
| <b>OWNER(S):</b>                                                                                                                |                                                                                                                                                                                                                                                                                                          | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| The Scottish Ministers<br>Victoria Quay<br>Edinburgh<br>EH6 6QQ                                                                 |                                                                                                                                                                                                                                                                                                          | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                                                                                                                                                                                                                                                                                          |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>                                                                                                                                                                                                                                                                                      | <b>Comments</b>                   |
| 5138/01                                                                                                                         | Provide approximately 10 linear metres of stone and mortar wall approx. 1.0m high on the new boundary to replicate the existing boundary treatment demolished as part of the works. New walls to be constructed by reusing the original wall materials where possible to maintain character of the area. | *Accommodation Works              |
| 5138/02                                                                                                                         | Provide approximately 25 linear metres of stone and mortar wall approx. 1.0m high on the new boundary to replicate the existing boundary treatment demolished as part of the works. New walls to be constructed by reusing the original wall materials where possible to maintain character of the area. | *Accommodation Works              |



**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                                                                                    |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                                                                                    |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/5142/01 Rev 2                                                                       |                                                                                                    |                                   |
| <b>OWNER(S):</b>                                                                                                                |                                                                                                    | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| The Scottish Ministers<br>Victoria Quay<br>Edinburgh<br>EH6 6QQ                                                                 |                                                                                                    | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                                                                                    |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>                                                                                | <b>Comments</b>                   |
| 5142/01                                                                                                                         | 30 linear metres of existing stone and mortar wall 1.5m high to be replicated on the new boundary. | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/5171/01 Rev 4                                                                      |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owner                             |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 5171/01                                                                                                                         | [REDACTED]          | Scheme Works                      |
| 5171/02                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 5171/03                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 5171/04                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 5171/05                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 5171/06                                                                                                                         | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|         |            |               |
|---------|------------|---------------|
|         |            |               |
| 5171/07 | [REDACTED] | *Scheme Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                     |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                     |                                   |
| <p><b>REFER TO DRAWING NUMBER:</b> B1033200/AW/5175/01 Rev 2</p>                                                                       |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                       |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                          |                     |                                   |
| <b>Ref No.</b>                                                                                                                         | <b>Requirements</b> | <b>Comments</b>                   |
| 5175/01                                                                                                                                | [REDACTED]          | *Accommodation Works              |
| 5175/02                                                                                                                                | [REDACTED]          | Scheme Works                      |
| 5175/03                                                                                                                                | [REDACTED]          | Scheme Works                      |

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**Appendix 1/15: Accommodation Works**

|         |            |              |
|---------|------------|--------------|
|         |            |              |
| 5175/04 | [REDACTED] | Scheme Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/5177/01 Rev.2                                                                       |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 5177/01                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 5177/02                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 5177/03                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 5177/04                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 5177/05                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 5177/06                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 5177/07                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 5177/08                                                                                                                         | [REDACTED]          | *Accommodation                    |

## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|         |            |                      |
|---------|------------|----------------------|
|         |            | Works                |
| 5177/09 | [REDACTED] | *Accommodation Works |
| 5177/10 | [REDACTED] | *Accommodation Works |
| 5177/11 | [REDACTED] | Scheme Works         |
| 5177/12 | [REDACTED] | *Scheme Works        |
| 5177/13 | [REDACTED] | *Accommodation Works |
| 5177/14 | [REDACTED] | *Accommodation Works |
| 5177/15 | [REDACTED] | *Accommodation Works |
| 5177/16 | [REDACTED] | *Accommodation Works |
| 5177/17 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
| <b>REFER TO DRAWING NUMBER: B1033200/AW/5194/01 Rev 1</b>                                                                       |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 5194/01                                                                                                                         | [REDACTED]                        | *Accommodation Works |



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**Appendix 1/15: Accommodation Works**

|         |            |                      |
|---------|------------|----------------------|
|         |            |                      |
| 5194/02 | [REDACTED] | *Accommodation Works |
| 5194/03 | [REDACTED] | *Accommodation Works |
| 5194/04 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/6005/01 Rev 1                                                                       |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 6005/01                                                                                                                         | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/6006/01 Rev 1                                                                       |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 6006/01                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 6006/02                                                                                                                         | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/6007/01 Rev 3                                                                       |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 6007/01                                                                                                                         | [REDACTED]                        | *Accommodation Works |
| 6007/02                                                                                                                         | [REDACTED]                        | *Accommodation Works |
| 6007/03                                                                                                                         | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                 |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                 |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/6008/01 Rev 1                                                                          |                                   |                 |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                 |
| [REDACTED]                                                                                                                      | Owners                            |                 |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                 |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b> |
| 6008/01                                                                                                                         | [REDACTED]                        | Scheme Works    |
| 6008/02                                                                                                                         | [REDACTED]                        | Scheme Works    |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                     |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                     |                                   |
| <p><b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/6012/01 Rev 1</p>                                                                      |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                       |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             |                     | None                              |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                          |                     |                                   |
| <b>Ref No.</b>                                                                                                                         | <b>Requirements</b> | <b>Comments</b>                   |
| 6012/01                                                                                                                                | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                 |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                 |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/6013/01 Rev 1                                                                       |                                   |                 |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                 |
| [REDACTED]                                                                                                                      | Owners                            |                 |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                 |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b> |
| 6013/01                                                                                                                         | [REDACTED]                        | Scheme Works    |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/6014/01 Rev 2                                                                       |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 6014/01                                                                                                                         | [REDACTED]                        | *Accommodation Works |



**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER: B1033200/AW/6020/01 Rev 1</b>                                                                       |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 6020/01                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 6020/02                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 6020/03                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 6020/04                                                                                                                         | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/6024/01 Rev 2                                                                       |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 6024/01                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 6024/02                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 6024/03                                                                                                                         | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/6026/01 Rev.2                                                                       |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 6026/01                                                                                                                         | [REDACTED]                        | *Accommodation Works |
| 6026/02                                                                                                                         | [REDACTED]                        | *Accommodation Works |
| 6026/03                                                                                                                         | [REDACTED]                        | Scheme Works         |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/6028/01 Rev 1                                                                       |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 6028/01                                                                                                                         | [REDACTED]          | *Accommodation works              |
| 6028/02                                                                                                                         | [REDACTED]          | *Accommodation works              |
| 6028/03                                                                                                                         | [REDACTED]          | *Accommodation works              |
| 6028/04                                                                                                                         | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/6031/01 Rev 2                                                                       |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 6031/01                                                                                                                         | [REDACTED]          | *Accommodation works              |
| 6031/02                                                                                                                         | [REDACTED]          | *Accommodation works              |
| 6031/03                                                                                                                         | [REDACTED]          | *Accommodation works              |
| 6031/04                                                                                                                         | [REDACTED]          | *Accommodation works              |
| 6031/05                                                                                                                         | [REDACTED]          | *Accommodation works              |

**Appendix 1/15: Accommodation Works**

| <p align="center"><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                            |                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------------------------|
| <p><b>REFER TO DRAWING NUMBER:</b> B1033200/AW/6033/01 Rev 3 &amp; B1033200/AW/6033/02 Rev 3</p>                                                      |                            |                                          |
| <p><b>OWNER(S):</b></p>                                                                                                                               |                            | <p><b>LESSEE(S) AND OCCUPIER(S):</b></p> |
| <p>[REDACTED]</p>                                                                                                                                     |                            | <p>Owners</p>                            |
| <p><b>LIST OF WORKS REQUIRED</b></p>                                                                                                                  |                            |                                          |
| <p><b>Ref No.</b></p>                                                                                                                                 | <p><b>Requirements</b></p> | <p><b>Comments</b></p>                   |
| <p>6033/01</p>                                                                                                                                        | <p>[REDACTED]</p>          | <p>*Accommodation Works</p>              |
| <p>6033/02</p>                                                                                                                                        | <p>[REDACTED]</p>          | <p>*Accommodation Works</p>              |
| <p>6033/03</p>                                                                                                                                        | <p>[REDACTED]</p>          | <p>*Accommodation Works</p>              |
| <p>6033/04</p>                                                                                                                                        | <p>[REDACTED]</p>          | <p>*Accommodation Works</p>              |
| <p>6033/05</p>                                                                                                                                        | <p>[REDACTED]</p>          | <p>*Accommodation Works</p>              |
| <p>6033/06</p>                                                                                                                                        | <p>[REDACTED]</p>          | <p>*Accommodation Works</p>              |
| <p>6033/07</p>                                                                                                                                        | <p>[REDACTED]</p>          | <p>*Accommodation Works</p>              |

**Appendix 1/15: Accommodation Works**

|         |            |                      |
|---------|------------|----------------------|
|         |            |                      |
| 6033/08 | [REDACTED] | *Accommodation Works |
| 6033/09 | [REDACTED] | *Accommodation Works |
| 6033/10 | [REDACTED] | *Accommodation Works |
| 6033/11 | [REDACTED] | *Accommodation Works |
| 6033/12 | [REDACTED] | *Accommodation Works |
| 6033/13 | [REDACTED] | *Accommodation Works |
| 6033/14 | [REDACTED] | *Accommodation Works |
| 6033/15 | [REDACTED] | *Accommodation Works |
| 6033/16 | [REDACTED] | *Accommodation Works |
| 6033/17 | [REDACTED] | *Accommodation Works |

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**Appendix 1/15: Accommodation Works**

|         |            |              |
|---------|------------|--------------|
| 6033/18 | [REDACTED] | Scheme Works |
| 6033/19 | [REDACTED] | Scheme Works |
| 6033/20 | [REDACTED] | Scheme Works |



**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/6036/01 Rev 1                                                                       |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 6036/01                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 6036/02                                                                                                                         | [REDACTED]          | Scheme Works                      |
| 6036/03                                                                                                                         | [REDACTED]          | Scheme Works                      |
| 6036/04                                                                                                                         | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                 |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                 |
| <b>REFER TO DRAWING NUMBER:</b> B1033200/AW/6037/01 Rev 2                                                                       |                                   |                 |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                 |
| [REDACTED]                                                                                                                      | Owners                            |                 |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                 |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b> |
| 6037/01                                                                                                                         | [REDACTED]                        | Scheme Works    |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> 10332/AW/6038/01 Rev 2                                                                          |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 6038/01                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 6038/02                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 6038/03                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 6038/04                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 6038/05                                                                                                                         | [REDACTED]          | *Accommodation Works              |
| 6038/06                                                                                                                         | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                        |                     |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <p><b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b></p> |                     |                                   |
| <p><b>REFER TO DRAWING NUMBER:</b> B1033200/AW/6039/01 Rev 2</p>                                                                       |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                       |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                             |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                          |                     |                                   |
| <b>Ref No.</b>                                                                                                                         | <b>Requirements</b> | <b>Comments</b>                   |
| 6039/01                                                                                                                                | [REDACTED]          | *Scheme Works                     |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
| <b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/6040/01 Rev 1                                                                      |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owner                             |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| 6040/01                                                                                                                         | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBERS:</b> B10332/AW/7004/01 Rev 0                                                                        |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | [REDACTED]                        |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 7004/01                                                                                                                         | [REDACTED]          | *Scheme Works                     |
| 7004/02                                                                                                                         | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

|                                                                                                                                 |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBERS:</b> B1033200/AW/7005/01 Rev 0                                                                      |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owner                             |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| 7005/01                                                                                                                         | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                                   |                      |
|------------------------------------------------------|-----------------------------------|----------------------|
| <b>SCHEDULE A:</b>                                   |                                   |                      |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                                   |                      |
| <b>REFER TO DRAWING NUMBER: P246600/ACCO/2/14004</b> |                                   |                      |
| <b>OWNER(S):</b>                                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                           | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                        |                                   |                      |
| <b>Ref No.</b>                                       | <b>Requirements</b>               | <b>Comments</b>      |
| BT003/01                                             | [REDACTED]                        | *Accommodation Works |
| BT003/02                                             | [REDACTED]                        | *Accommodation Works |
| BT003/03                                             | [REDACTED]                        | *Accommodation Works |
| BT003/04                                             | [REDACTED]                        | *Accommodation Works |
| BT003/06                                             | [REDACTED]                        | Scheme Works         |



**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|----------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> P246600/ACCO/2/14005                                                           |                     |                                   |
| <b>OWNER(S):</b>                                                                                               |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                     |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                  |                     |                                   |
| <b>Ref No.</b>                                                                                                 | <b>Requirements</b> | <b>Comments</b>                   |
| BT004/01                                                                                                       | [REDACTED]          | *Accommodation Works              |
| BT004/02                                                                                                       | [REDACTED]          | Scheme Works                      |
| BT004/03                                                                                                       | [REDACTED]          | *Accommodation Works              |
| BT004/04                                                                                                       | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                     |                                   |
|------------------------------------------------------|---------------------|-----------------------------------|
| <b>SCHEDULE A:</b>                                   |                     |                                   |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                     |                                   |
| <b>REFER TO DRAWING NUMBER: P246600/ACCO/2/14006</b> |                     |                                   |
| <b>OWNER(S):</b>                                     |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                           |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                        |                     |                                   |
| <b>Ref No.</b>                                       | <b>Requirements</b> | <b>Comments</b>                   |
| BT005/01                                             | [REDACTED]          | Scheme Works                      |
| BT005/02                                             | [REDACTED]          | *Accommodation Works              |
| BT005/03                                             | [REDACTED]          | *Accommodation Works              |
| BT005/04                                             | [REDACTED]          | *Accommodation Works              |
| BT005/05                                             | [REDACTED]          | *Accommodation Works              |
| BT005/06                                             | [REDACTED]          | Scheme Works                      |
| BT005/07                                             | [REDACTED]          | Scheme Works                      |
| BT005/08                                             | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                                                                                                                  |                     |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>SCHEDULE A:</b>                                                                                                                           |                     |                                   |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>                                                                                                |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> P246600/ACCO/2/14007, P246600/ACCO/2/14008, P246600/ACCO/2/14009, P246600/ACCO/2/14010, P246600/ACCO/2/14011 |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                             |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                                   |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                                |                     |                                   |
| <b>Ref No.</b>                                                                                                                               | <b>Requirements</b> | <b>Comments</b>                   |
| BT006/01                                                                                                                                     | [REDACTED]          | Scheme Works                      |
| BT006/02                                                                                                                                     | [REDACTED]          | *Accommodation Works              |
| BT006/03                                                                                                                                     | [REDACTED]          | *Accommodation Works              |
| BT006/04                                                                                                                                     | [REDACTED]          | *Accommodation Works              |
| BT006/05                                                                                                                                     | [REDACTED]          | *Accommodation Works              |
| BT006/06                                                                                                                                     | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                                   |                      |
|------------------------------------------------------|-----------------------------------|----------------------|
| <b>SCHEDULE A:</b>                                   |                                   |                      |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                                   |                      |
| <b>REFER TO DRAWING NUMBER: P246600/ACCO/2/14013</b> |                                   |                      |
| <b>OWNER(S):</b>                                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                           | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                        |                                   |                      |
| <b>Ref No.</b>                                       | <b>Requirements</b>               | <b>Comments</b>      |
| BT007/01                                             | [REDACTED]                        | *Accommodation Works |
| BT007/02                                             | [REDACTED]                        | *Accommodation Works |
| BT007/03                                             | [REDACTED]                        | Scheme Works         |
| BT007/04                                             | [REDACTED]                        | *Accommodation Works |
| BT007/05                                             | [REDACTED]                        | *Accommodation Works |
| BT007/06                                             | [REDACTED]                        | Scheme Works         |
| BT007/07                                             | [REDACTED]                        | *Accommodation Works |
| BT007/08                                             | [REDACTED]                        | *Accommodation Works |
| BT007/09                                             | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|                                                      |                     |                                   |
|------------------------------------------------------|---------------------|-----------------------------------|
| <b>AWPR B-T ROAD SCHEME</b>                          |                     |                                   |
| <b>SCHEDULE A:</b>                                   |                     |                                   |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                     |                                   |
| <b>REFER TO DRAWING NUMBER: P246600/ACCO/2/14014</b> |                     |                                   |
| <b>OWNER(S):</b>                                     |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                           |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                        |                     |                                   |
| <b>Ref No.</b>                                       | <b>Requirements</b> | <b>Comments</b>                   |
| BT008/01                                             | [REDACTED]          | *Accommodation Works              |
| BT008/02                                             | [REDACTED]          | *Accommodation Works              |
| BT008/03                                             | [REDACTED]          | *Accommodation Works              |
| BT008/05                                             | [REDACTED]          | *Accommodation Works              |
| BT008/06                                             | [REDACTED]          | *Accommodation Works              |
| BT008/07                                             | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                     |                                   |
|------------------------------------------------------|---------------------|-----------------------------------|
| <b>SCHEDULE A:</b>                                   |                     |                                   |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                     |                                   |
| <b>REFER TO DRAWING NUMBER: P246600/ACCO/2/14015</b> |                     |                                   |
| <b>OWNER(S):</b>                                     |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                           |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                        |                     |                                   |
| <b>Ref No.</b>                                       | <b>Requirements</b> | <b>Comments</b>                   |
| BT009/01                                             | [REDACTED]          | *Accommodation Works              |
| BT009/02                                             | [REDACTED]          | *Accommodation Works              |
| BT009/03                                             | [REDACTED]          | *Accommodation Works              |
| BT009/04                                             | [REDACTED]          | *Accommodation Works              |
| BT009/05                                             | [REDACTED]          | *Accommodation Works              |
| BT009/06                                             | [REDACTED]          | *Accommodation Works              |
| BT009/07                                             | [REDACTED]          | *Accommodation Works              |
| BT009/08                                             | [REDACTED]          | *Accommodation Works              |

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**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
| BT009/09 | [REDACTED] | *Accommodation Works |
|----------|------------|----------------------|



**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|----------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> P246600/ACCO/2/14017                                   |                     |                                   |
| <b>OWNER(S):</b>                                                                       |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                             |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                          |                     |                                   |
| <b>Ref No.</b>                                                                         | <b>Requirements</b> | <b>Comments</b>                   |
| BT011/01                                                                               | [REDACTED]          | *Accommodation Works              |
| BT011/02                                                                               | [REDACTED]          | *Accommodation Works              |
| BT011/03                                                                               | [REDACTED]          | *Accommodation Works              |
| BT011/04                                                                               | [REDACTED]          | Scheme Works                      |
| BT011/05                                                                               | [REDACTED]          | *Accommodation Works              |
| BT011/08                                                                               | [REDACTED]          | *Accommodation Works              |
| BT011/07                                                                               | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|          |              |                      |
|----------|--------------|----------------------|
|          |              |                      |
| BT011/06 | [REDACTED]   | *Accommodation Works |
| BT011/09 | [REDACTED] . | *Accommodation Works |
| BT011/11 | [REDACTED]   | Scheme Works         |
| BT011/10 | [REDACTED]   | *Accommodation Works |
| BT011/12 | [REDACTED]   | *Accommodation Works |
| BT011/13 | [REDACTED]   | *Accommodation Works |
| BT011/14 | [REDACTED]   | Scheme Works         |
| BT011/15 | [REDACTED]   | *Accommodation Works |
| BT011/16 | [REDACTED]   | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                                   |                      |
|------------------------------------------------------|-----------------------------------|----------------------|
| <b>SCHEDULE A:</b>                                   |                                   |                      |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                                   |                      |
| <b>REFER TO DRAWING NUMBER: P246600/ACCO/2/14018</b> |                                   |                      |
| <b>OWNER(S):</b>                                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                           | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                        |                                   |                      |
| <b>Ref No.</b>                                       | <b>Requirements</b>               | <b>Comments</b>      |
| BT012/01                                             | [REDACTED]                        | *Accommodation Works |
| BT012/02                                             | [REDACTED]                        | *Accommodation Works |
| BT012/03                                             | [REDACTED]                        | Scheme Works         |
| BT012/04                                             | [REDACTED]                        | *Accommodation Works |
| BT012/05                                             | [REDACTED]                        | *Accommodation Works |
| BT012/06                                             | [REDACTED]                        | Scheme Works         |
| BT012/07                                             | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
|          |            |                      |
| BT012/11 | [REDACTED] | Scheme Works         |
| BT012/12 | [REDACTED] | *Accommodation Works |
| BT012/13 | [REDACTED] | Scheme Works         |
| BT012/14 | [REDACTED] | *Accommodation Works |
| BT012/15 | [REDACTED] | Scheme Works         |
| BT012/17 | [REDACTED] | *Accommodation Works |
| BT012/18 | [REDACTED] | Scheme Works         |
| BT012/20 | [REDACTED] | *Accommodation Works |
| BT012/21 | [REDACTED] | Scheme Works         |
| BT012/22 | [REDACTED] | *Accommodation Works |
| BT012/23 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
|          |            |                      |
| BT012/24 | [REDACTED] | Scheme Works         |
| BT012/25 | [REDACTED] | *Accommodation Works |
| BT012/27 | [REDACTED] | *Accommodation Works |
| BT012/30 | [REDACTED] | *Accommodation Works |
| BT012/31 | [REDACTED] | Scheme Works         |
| BT012/32 | [REDACTED] | *Accommodation Works |
| BT012/33 | [REDACTED] | *Accommodation Works |
| BT012/34 | [REDACTED] | *Accommodation Works |
| BT012/36 | [REDACTED] | *Accommodation Works |
| BT012/37 | [REDACTED] | Scheme Works         |
| BT012/38 | [REDACTED] | *Accommodation Works |

## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|          |              |                      |
|----------|--------------|----------------------|
|          |              |                      |
| BT012/40 | [REDACTED]   | *Accommodation Works |
| BT012/42 | [REDACTED]   | *Accommodation Works |
| BT012/43 | [REDACTED]   | *Accommodation Works |
| BT012/44 | [REDACTED]   | *Accommodation Works |
| BT012/46 | [REDACTED]   | *Accommodation Works |
| BT012/47 | [REDACTED]   | Scheme Works         |
| BT012/48 | [REDACTED] . | Scheme Works         |
| BT012/49 | [REDACTED]   | *Accommodation Works |
| BT012/50 | [REDACTED]   | *Accommodation Works |
| BT012/51 | [REDACTED]   | *Accommodation Works |
| BT012/52 | [REDACTED]   | Scheme Works         |
| BT012/53 | [REDACTED]   | *Accommodation Works |

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**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
|          |            |                      |
| BT012/54 | [REDACTED] | *Accommodation Works |
| BT012/55 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                                   |                      |
|------------------------------------------------------|-----------------------------------|----------------------|
| <b>SCHEDULE A:</b>                                   |                                   |                      |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                                   |                      |
| <b>REFER TO DRAWING NUMBER:</b> P246600/ACCO/2/14021 |                                   |                      |
| <b>OWNER(S):</b>                                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                           | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                        |                                   |                      |
| <b>Ref No.</b>                                       | <b>Requirements</b>               | <b>Comments</b>      |
| BT014/01                                             | [REDACTED]                        | *Accommodation Works |
| BT014/25                                             | [REDACTED]                        | *Accommodation Works |
| BT014/09                                             | [REDACTED]                        | *Accommodation Works |
| BT014/10                                             | [REDACTED]                        | Scheme Works         |
| BT014/11                                             | [REDACTED]                        | *Accommodation Works |
| BT014/12                                             | [REDACTED]                        | Scheme Works         |
| BT014/31                                             | [REDACTED]                        | Scheme Works         |
| BT014/16                                             | [REDACTED]                        | *Accommodation Works |
| BT014/17                                             | [REDACTED]                        | Scheme Works         |
| BT014/18                                             | [REDACTED]                        | Scheme Works         |
| BT014/23                                             | [REDACTED]                        | *Accommodation Works |
| BT014/24                                             | [REDACTED]                        | *Accommodation       |



## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
|          |            | Works                |
| BT014/26 | [REDACTED] | *Accommodation Works |
| BT014/28 | [REDACTED] | *Accommodation Works |
| BT014/29 | [REDACTED] | *Accommodation Works |
| BT014/02 | [REDACTED] | Scheme Works         |
| BT014/03 | [REDACTED] | Scheme Works         |
| BT014/04 | [REDACTED] | Scheme Works         |
| BT014/05 | [REDACTED] | Scheme Works         |
| BT014/06 | [REDACTED] | Scheme Works         |
| BT014/13 | [REDACTED] | Scheme Works         |
| BT014/14 | [REDACTED] | Scheme Works         |
| BT014/32 | [REDACTED] | Scheme Works         |
| BT014/33 | [REDACTED] | *Accommodation Works |
| BT014/34 | [REDACTED] | *Accommodation Works |
| BT014/36 | [REDACTED] | *Accommodation Works |
| BT014/37 | [REDACTED] | *Accommodation Works |
| BT014/38 | [REDACTED] | *Accommodation Works |
| BT014/39 | [REDACTED] | *Accommodation Works |
| BT014/40 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

**Appendix 1/15: Accommodation Works**

|                                                                                                    |                     |                                             |
|----------------------------------------------------------------------------------------------------|---------------------|---------------------------------------------|
| <b>AWPR B-T ROAD SCHEME</b><br><b>SCHEDULE A:</b><br><b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                             |
| <b>REFER TO DRAWING NUMBER: P246600/ACCO/2/14022</b>                                               |                     |                                             |
| <b>OWNER(S):</b><br>[REDACTED]                                                                     |                     | <b>LESSEE(S) AND OCCUPIER(S):</b><br>Owners |
| <b>LIST OF WORKS REQUIRED</b>                                                                      |                     |                                             |
| <b>Ref No.</b>                                                                                     | <b>Requirements</b> | <b>Comments</b>                             |
| BT015/01                                                                                           | [REDACTED]          | *Accommodation Works                        |

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                                   |                      |
|------------------------------------------------------|-----------------------------------|----------------------|
| <b>SCHEDULE A:</b>                                   |                                   |                      |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                                   |                      |
| <b>REFER TO DRAWING NUMBER: P246600/ACCO/2/14024</b> |                                   |                      |
| <b>OWNER(S):</b>                                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                           | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                        |                                   |                      |
| <b>Ref No.</b>                                       | <b>Requirements</b>               | <b>Comments</b>      |
| BT017/01                                             | [REDACTED]                        | *Accommodation Works |
| BT017/02                                             | [REDACTED]                        | *Accommodation Works |
| BT017/03                                             | [REDACTED]                        | Scheme Works         |
| BT017/04                                             | [REDACTED]                        | Scheme Works         |
| BT017/06                                             | [REDACTED]                        | *Accommodation Works |
| BT017/07                                             | [REDACTED]                        | Scheme Works         |
| BT017/08                                             | [REDACTED]                        | *Accommodation Works |
| BT017/09                                             | [REDACTED]                        | Scheme Works         |
| BT017/10                                             | [REDACTED]                        | *Accommodation Works |
| BT017/12                                             | [REDACTED]                        | *Accommodation Works |
| BT017/13                                             | [REDACTED]                        | *Accommodation Works |

## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
| BT017/14 | [REDACTED] | Scheme Works         |
| BT017/15 | [REDACTED] | *Accommodation Works |
| BT017/16 | [REDACTED] | *Accommodation Works |
| BT017/17 | [REDACTED] | Scheme Works         |
| BT017/18 | [REDACTED] | *Accommodation Works |
| BT017/19 | [REDACTED] | *Accommodation Works |
| BT017/20 | [REDACTED] | *Accommodation Works |
| BT017/22 | [REDACTED] | *Accommodation Works |
| BT017/23 | [REDACTED] | *Accommodation Works |
| BT017/24 | [REDACTED] | *Accommodation Works |
| BT017/25 | [REDACTED] | Scheme Works         |
| BT017/05 | [REDACTED] | Scheme Works         |
| BT017/26 | [REDACTED] | *Accommodation Works |
| BT017/27 | [REDACTED] | Scheme Works         |
| BT017/28 | [REDACTED] | *Accommodation Works |
| BT017/29 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
|          | mains.     |                      |
| BT017/31 | [REDACTED] | Scheme Works         |
| BT017/32 | [REDACTED] | *Accommodation Works |
| BT017/33 | [REDACTED] | *Accommodation Works |
| BT017/34 | [REDACTED] | Scheme Works         |
| BT017/37 | [REDACTED] | *Accommodation Works |
| BT017/35 | [REDACTED] | *Accommodation Works |
| BT017/38 | [REDACTED] | *Accommodation Works |
| BT017/36 | [REDACTED] | *Accommodation Works |
| BT017/38 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|----------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> P246600/ACCO/2/14025                                   |                     |                                   |
| <b>OWNER(S):</b>                                                                       |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                             |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                          |                     |                                   |
| <b>Ref No.</b>                                                                         | <b>Requirements</b> | <b>Comments</b>                   |
| BT018/01                                                                               | [REDACTED]          | Scheme Works                      |

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                     |                                   |
|------------------------------------------------------|---------------------|-----------------------------------|
| <b>SCHEDULE A:</b>                                   |                     |                                   |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                     |                                   |
| <b>REFER TO DRAWING NUMBER: P246600/ACCO/2/14026</b> |                     |                                   |
| <b>OWNER(S):</b>                                     |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                           |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                        |                     |                                   |
| <b>Ref No.</b>                                       | <b>Requirements</b> | <b>Comments</b>                   |
| BT019/01                                             | [REDACTED]          | *Accommodation Works              |
| BT019/02                                             | [REDACTED]          | Scheme Works                      |
| BT019/37                                             | [REDACTED]          | Scheme Works                      |
| BT019/04                                             | [REDACTED]          | Scheme Works                      |
| BT019/05                                             | [REDACTED]          | Scheme Works                      |
| BT019/07                                             | [REDACTED]          | *Accommodation Works              |
| BT019/10                                             | [REDACTED] .        | *Accommodation Works              |
| BT019/12                                             | [REDACTED]          | Scheme Works                      |
| BT019/13                                             | [REDACTED]          | *Accommodation Works              |
| BT019/14                                             | [REDACTED]          | *Accommodation Works              |
| BT019/15                                             | [REDACTED]          | *Accommodation Works              |



## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
|          |            |                      |
| BT019/16 | [REDACTED] | *Accommodation Works |
| BT019/17 | [REDACTED] | *Accommodation Works |
| BT019/18 | [REDACTED] | *Accommodation Works |
| BT019/19 | [REDACTED] | *Accommodation Works |
| BT019/38 | [REDACTED] | Scheme Works         |
| BT019/20 | [REDACTED] | Scheme Works         |
| BT019/23 | [REDACTED] | *Accommodation Works |
| BT019/25 | [REDACTED] | *Accommodation Works |
| BT019/26 | [REDACTED] | Scheme Works         |
| BT019/27 | [REDACTED] | *Accommodation Works |
| BT019/29 | [REDACTED] | *Accommodation Works |
| BT019/30 | [REDACTED] | *Accommodation Works |
| BT019/31 | [REDACTED] | Scheme Works         |
| BT019/32 | [REDACTED] | *Accommodation Works |
| BT019/34 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                     |                                   |
|------------------------------------------------------|---------------------|-----------------------------------|
| <b>SCHEDULE A:</b>                                   |                     |                                   |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> P246600/ACCO/2/14027 |                     |                                   |
| <b>OWNER(S):</b>                                     |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                           |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                        |                     |                                   |
| <b>Ref No.</b>                                       | <b>Requirements</b> | <b>Comments</b>                   |
| BT020/01                                             | [REDACTED]          | *Accommodation Works              |
| BT020/02                                             | [REDACTED]          | Scheme Works                      |
| BT020/03                                             | [REDACTED]          | *Accommodation Works              |
| BT020/04                                             | [REDACTED]          | Scheme Works                      |
| BT020/05                                             | [REDACTED]          | *Accommodation Works              |
| BT020/07                                             | [REDACTED]          | *Accommodation Works              |
| BT020/08                                             | [REDACTED]          | *Accommodation Works              |
| BT020/09                                             | [REDACTED]          | Scheme Works                      |
| BT020/10                                             | [REDACTED]          | *Accommodation Works              |
| BT020/13                                             | [REDACTED]          | *Accommodation Works              |

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**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
| BT020/14 | [REDACTED] | *Accommodation Works |
|----------|------------|----------------------|

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                     |                                   |
|------------------------------------------------------|---------------------|-----------------------------------|
| <b>SCHEDULE A:</b>                                   |                     |                                   |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> P246600/ACCO/2/14028 |                     |                                   |
| <b>OWNER(S):</b>                                     |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                           |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                        |                     |                                   |
| <b>Ref No.</b>                                       | <b>Requirements</b> | <b>Comments</b>                   |
| BT021/01                                             | [REDACTED]          | *Accommodation Works              |
| BT021/02                                             | [REDACTED]          | *Accommodation Works              |
| BT021/03                                             | [REDACTED]          | *Accommodation Works              |
| BT021/04                                             | [REDACTED]          | *Accommodation Works              |
| BT021/05                                             | [REDACTED]          | *Accommodation Works              |

## Appendix 1/15: Accommodation Works

| <b>AWPR B-T ROAD SCHEME</b>                          |                     |                                   |
|------------------------------------------------------|---------------------|-----------------------------------|
| <b>SCHEDULE A:</b>                                   |                     |                                   |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> P246600/ACCO/2/14029 |                     |                                   |
| <b>OWNER(S):</b>                                     |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                           |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                        |                     |                                   |
| <b>Ref No.</b>                                       | <b>Requirements</b> | <b>Comments</b>                   |
| BT022/01                                             | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                     |                                   |
|------------------------------------------------------|---------------------|-----------------------------------|
| <b>SCHEDULE A:</b>                                   |                     |                                   |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                     |                                   |
| <b>REFER TO DRAWING NUMBER: P246600/ACCO/2/14030</b> |                     |                                   |
| <b>OWNER(S):</b>                                     |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                           |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                        |                     |                                   |
| <b>Ref No.</b>                                       | <b>Requirements</b> | <b>Comments</b>                   |
| BT023/01                                             | [REDACTED]          | *Accommodation Works              |
| BT023/02                                             | [REDACTED]          | *Accommodation Works              |
| BT023/03                                             | [REDACTED]          | Scheme Works                      |
| BT023/04                                             | [REDACTED]          | *Accommodation Works              |
| BT023/05                                             | [REDACTED]          | *Accommodation Works              |
| BT023/06                                             | [REDACTED]          | Scheme Works                      |
| BT023/07                                             | [REDACTED]          | Scheme Works                      |
| BT023/08                                             | [REDACTED]          | *Accommodation Works              |
| BT023/09                                             | [REDACTED]          | Scheme Works                      |
| BT023/10                                             | [REDACTED]          | *Accommodation Works              |
| BT023/11                                             | [REDACTED]          | *Accommodation                    |

**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
|          |            | Works                |
| BT023/12 | [REDACTED] | *Accommodation Works |
| BT023/14 | [REDACTED] | *Accommodation Works |
| BT023/15 | [REDACTED] | Scheme Works         |
| BT023/16 | [REDACTED] | *Accommodation Works |
| BT023/18 | [REDACTED] | *Accommodation Works |
| BT023/19 | [REDACTED] | *Accommodation Works |
| BT023/20 | [REDACTED] | *Accommodation Works |
| BT023/21 | [REDACTED] | *Accommodation Works |
| BT023/23 | [REDACTED] | *Accommodation Works |
| BT023/24 | [REDACTED] | *Accommodation Works |
| BT023/25 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                                   |                      |
|------------------------------------------------------|-----------------------------------|----------------------|
| <b>SCHEDULE A:</b>                                   |                                   |                      |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                                   |                      |
| <b>REFER TO DRAWING NUMBER: P246600/ACCO/2/14032</b> |                                   |                      |
| <b>OWNER(S):</b>                                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                           | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                        |                                   |                      |
| <b>Ref No.</b>                                       | <b>Requirements</b>               | <b>Comments</b>      |
| BT025/01                                             | [REDACTED]                        | Scheme Works         |
| BT025/02                                             | [REDACTED]                        | Scheme Works         |
| BT025/03                                             | [REDACTED]                        | Scheme Works         |
| BT025/04                                             | [REDACTED]                        | *Accommodation Works |
| BT025/05                                             | [REDACTED]                        | *Accommodation Works |
| BT025/07                                             | [REDACTED]                        | *Accommodation Works |
| BT025/08                                             | [REDACTED]                        | *Accommodation Works |
| BT025/09                                             | [REDACTED]                        | Scheme Works         |
| BT025/10                                             | [REDACTED]                        | *Accommodation Works |
| BT025/12                                             | [REDACTED]                        | *Accommodation Works |



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**Appendix 1/15: Accommodation Works**

|          |            |              |
|----------|------------|--------------|
| BT025/14 | [REDACTED] | Scheme Works |
|----------|------------|--------------|

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                                   |                      |
|------------------------------------------------------|-----------------------------------|----------------------|
| <b>SCHEDULE A:</b>                                   |                                   |                      |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                                   |                      |
| <b>REFER TO DRAWING NUMBER: P246600/ACCO/2/14033</b> |                                   |                      |
| <b>OWNER(S):</b>                                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                           | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                        |                                   |                      |
| <b>Ref No.</b>                                       | <b>Requirements</b>               | <b>Comments</b>      |
| BT026/01                                             | [REDACTED]                        | *Accommodation Works |
| BT026/02                                             | [REDACTED]                        | *Accommodation Works |
| BT026/03                                             | [REDACTED]                        | Scheme Works         |
| BT026/04                                             | [REDACTED]                        | *Accommodation Works |
| BT026/05                                             | [REDACTED]                        | *Accommodation Works |
| BT026/06                                             | [REDACTED]                        | *Accommodation Works |
| BT026/07                                             | [REDACTED]                        | *Accommodation Works |
| BT026/08                                             | [REDACTED]                        | *Accommodation Works |
| BT026/09                                             | [REDACTED]                        | Scheme Works         |
| BT026/10                                             | [REDACTED]                        | Scheme Works         |
| BT026/11                                             | [REDACTED]                        | Scheme Works         |

## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
| BT026/12 | [REDACTED] | Scheme Works         |
| BT026/13 | [REDACTED] | Scheme Works         |
| BT026/14 | [REDACTED] | Scheme Works         |
| BT026/15 | [REDACTED] | *Accommodation Works |
| BT026/16 | [REDACTED] | Scheme Works         |
| BT026/17 | [REDACTED] | *Accommodation Works |
| BT026/18 | [REDACTED] | Scheme Works         |
| BT026/19 | [REDACTED] | Scheme Works         |
| BT026/20 | [REDACTED] | Scheme Works         |
| BT026/21 | [REDACTED] | *Accommodation Works |
| BT026/22 | [REDACTED] | Scheme Works         |
| BT026/23 | [REDACTED] | Scheme Works         |
| BT026/24 | [REDACTED] | Scheme Works         |
| BT026/25 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                     |                                   |
|------------------------------------------------------|---------------------|-----------------------------------|
| <b>SCHEDULE A:</b>                                   |                     |                                   |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> P246600/ACCO/2/14034 |                     |                                   |
| <b>OWNER(S):</b>                                     |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                           |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                        |                     |                                   |
| <b>Ref No.</b>                                       | <b>Requirements</b> | <b>Comments</b>                   |
| BT027/01                                             | [REDACTED]          | *Accommodation Works              |
| BT027/02                                             | [REDACTED]          | Scheme works                      |
| BT027/04                                             | [REDACTED]          | *Accommodation Works              |
| BT027/05                                             | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                     |                                   |
|------------------------------------------------------|---------------------|-----------------------------------|
| <b>SCHEDULE A:</b>                                   |                     |                                   |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> P246600/ACCO/2/14035 |                     |                                   |
| <b>OWNER(S):</b>                                     |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                           |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                        |                     |                                   |
| <b>Ref No.</b>                                       | <b>Requirements</b> | <b>Comments</b>                   |
| BT028/01                                             | [REDACTED]          | *Accommodation Works              |
| BT028/02                                             | [REDACTED]          | Scheme Works                      |
| BT028/03                                             | [REDACTED]          | *Accommodation Works              |
| BT028/04                                             | [REDACTED]          | *Accommodation Works              |
| BT028/05                                             | [REDACTED]          | Scheme Works                      |
| BT028/06                                             | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                                   |                     |                                   |
|---------------------------------------------------------------|---------------------|-----------------------------------|
| <b>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
| <b>REFER TO DRAWING NUMBER: P246600/ACCO/2/14036</b>          |                     |                                   |
| <b>OWNER(S):</b>                                              |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                    |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                 |                     |                                   |
| <b>Ref No.</b>                                                | <b>Requirements</b> | <b>Comments</b>                   |
| BT029/01                                                      | [REDACTED]          | *Accommodation Works              |
| BT029/02                                                      | [REDACTED]          | *Accommodation Works              |
| BT029/04                                                      | [REDACTED]          | *Accommodation Works              |
| BT029/10                                                      | [REDACTED]          | Scheme Works                      |
| BT029/10                                                      | [REDACTED]          | Scheme Works                      |
| BT029/10                                                      | [REDACTED]          | Scheme Works                      |
| BT029/10                                                      | [REDACTED]          | Scheme Works                      |
| BT029/12                                                      | [REDACTED]          | *Accommodation Works              |
| BT029/14                                                      | [REDACTED]          | *Accommodation Works              |
| BT029/15                                                      | [REDACTED]          | *Accommodation Works              |
| BT029/16                                                      | [REDACTED]          | Scheme Works                      |
| BT029/18                                                      | [REDACTED]          | *Accommodation                    |

## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
|          |            | Works                |
| BT029/19 | [REDACTED] | Scheme Works         |
| BT029/20 | [REDACTED] | Scheme Works         |
| BT029/22 | [REDACTED] | *Accommodation Works |
| BT029/24 | [REDACTED] | *Accommodation Works |
| BT029/28 | [REDACTED] | *Accommodation Works |
| BT029/34 | [REDACTED] | *Accommodation Works |
| BT029/35 | [REDACTED] | *Accommodation Works |
| BT029/36 | [REDACTED] | Scheme Works         |
| BT029/38 | [REDACTED] | Scheme Works         |
| BT029/39 | [REDACTED] | Scheme Works         |
| BT029/48 | [REDACTED] | *Accommodation Works |
| BT029/47 | [REDACTED] | Scheme Works         |
| BT029/46 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                                   |                      |
|------------------------------------------------------|-----------------------------------|----------------------|
| <b>SCHEDULE A:</b>                                   |                                   |                      |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                                   |                      |
| <b>REFER TO DRAWING NUMBER: P246600/ACCO/2/14037</b> |                                   |                      |
| <b>OWNER(S):</b>                                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                           | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                        |                                   |                      |
| <b>Ref No.</b>                                       | <b>Requirements</b>               | <b>Comments</b>      |
| BT030/01                                             | [REDACTED]                        | *Accommodation Works |
| BT030/03                                             | [REDACTED]                        | *Accommodation Works |
| BT030/04                                             | [REDACTED]                        | *Accommodation Works |
| BT030/05                                             | [REDACTED]                        | Scheme Works         |
| BT030/07                                             | [REDACTED]                        | Scheme Works         |
| BT030/08                                             | [REDACTED]                        | *Accommodation Works |
| BT030/09                                             | [REDACTED]                        | *Accommodation Works |
| BT030/10                                             | [REDACTED]                        | *Accommodation Works |
| BT030/12                                             | [REDACTED]                        | *Accommodation Works |
| BT030/13                                             | [REDACTED]                        | Scheme Works         |



**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
| BT030/14 | [REDACTED] | *Accommodation Works |
| BT030/15 | [REDACTED] | Scheme Works         |
| BT030/16 | [REDACTED] | *Accommodation Works |
| BT030/18 | [REDACTED] | *Accommodation Works |
| BT030/19 | [REDACTED] | *Accommodation Works |
| BT030/20 | [REDACTED] | *Accommodation Works |
| BT030/21 | [REDACTED] | Scheme Works         |
| BT030/22 | [REDACTED] | *Accommodation Works |
| BT030/23 | [REDACTED] | *Accommodation Works |
| BT030/25 | [REDACTED] | Scheme Works         |
| BT030/26 | [REDACTED] | *Accommodation Works |
| BT030/27 | [REDACTED] | Scheme Works         |
| BT030/28 | [REDACTED] | *Accommodation Works |
| BT030/29 | [REDACTED] | *Accommodation Works |

## Part 4: Specification

**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
| BT030/30 | [REDACTED] | *Accommodation Works |
| BT030/32 | [REDACTED] | *Accommodation Works |
| BT030/33 | [REDACTED] | *Accommodation Works |
| BT030/34 | [REDACTED] | Scheme Works         |
| BT030/35 | [REDACTED] | *Accommodation Works |
| BT030/36 | [REDACTED] | Scheme Works         |
| BT030/37 | [REDACTED] | *Accommodation Works |
| BT030/39 | [REDACTED] | *Accommodation Works |
| BT030/40 | [REDACTED] | *Accommodation Works |
| BT030/41 | [REDACTED] | *Accommodation Works |
| BT030/42 | [REDACTED] | Scheme Works         |
| BT030/43 | [REDACTED] | *Accommodation Works |
| BT030/44 | [REDACTED] | Scheme Works         |
| BT030/45 | [REDACTED] | *Accommodation Works |
| BT030/46 | [REDACTED] | *Accommodation Works |
| BT030/48 | [REDACTED] | *Accommodation Works |

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**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
| BT030/49 | [REDACTED] | *Accommodation Works |
|----------|------------|----------------------|

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                                   |                      |
|------------------------------------------------------|-----------------------------------|----------------------|
| <b>SCHEDULE A:</b>                                   |                                   |                      |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                                   |                      |
| <b>REFER TO DRAWING NUMBER: P246600/ACCO/2/14038</b> |                                   |                      |
| <b>OWNER(S):</b>                                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                           | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                        |                                   |                      |
| <b>Ref No.</b>                                       | <b>Requirements</b>               | <b>Comments</b>      |
| BT031/01                                             | [REDACTED]                        | *Accommodation Works |
| BT031/03                                             | [REDACTED]                        | Scheme Works         |
| BT031/04                                             | [REDACTED]                        | *Accommodation Works |
| BT031/05                                             | [REDACTED]                        | Scheme Works         |
| BT031/06                                             | [REDACTED]                        | *Accommodation Works |
| BT031/07                                             | [REDACTED]                        | Scheme Works         |
| BT031/09                                             | [REDACTED]                        | *Accommodation Works |
| BT031/10                                             | [REDACTED]                        | *Accommodation Works |
| BT031/11                                             | [REDACTED]                        | Scheme Works         |
| BT031/12                                             | [REDACTED]                        | *Accommodation Works |

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**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
|          |            |                      |
| BT031/14 | [REDACTED] | Scheme Works         |
| BT031/15 | [REDACTED] | *Accommodation Works |
| BT031/16 | [REDACTED] | *Accommodation Works |
| BT031/17 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                     |                                   |
|------------------------------------------------------|---------------------|-----------------------------------|
| <b>SCHEDULE A:</b>                                   |                     |                                   |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> P246600/ACCO/2/14039 |                     |                                   |
| <b>OWNER(S):</b>                                     |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                           |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                        |                     |                                   |
| <b>Ref No.</b>                                       | <b>Requirements</b> | <b>Comments</b>                   |
| BT032/01                                             | [REDACTED]          | *Accommodation Works              |
| BT032/02                                             | [REDACTED]          | *Accommodation Works              |
| BT032/04                                             | [REDACTED]          | Scheme Works                      |
| BT032/05                                             | [REDACTED]          | Scheme Works                      |
| BT032/06                                             | [REDACTED]          | *Accommodation Works              |
| BT032/07                                             | [REDACTED]          | Scheme Works                      |
| BT032/08                                             | [REDACTED]          | *Accommodation Works              |
| BT032/11                                             | [REDACTED]          | *Accommodation Works              |
| BT032/13                                             | [REDACTED]          | *Accommodation Works              |
| BT032/14                                             | [REDACTED]          | *Accommodation                    |

**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
|          |            | Works                |
| BT032/15 | [REDACTED] | *Accommodation Works |
| BT032/16 | [REDACTED] | Scheme Works         |
| BT032/17 | [REDACTED] | Scheme Works         |
| BT032/18 | [REDACTED] | Scheme Works         |
| BT032/20 | [REDACTED] | *Accommodation Works |
| BT032/22 | [REDACTED] | Scheme Works         |
| BT032/47 | [REDACTED] | *Accommodation Works |
| BT032/24 | [REDACTED] | *Accommodation Works |
| BT032/25 | [REDACTED] | Scheme Works         |
| BT032/28 | [REDACTED] | *Accommodation Works |
| BT032/29 | [REDACTED] | Scheme Works         |
| BT032/30 | [REDACTED] | *Accommodation Works |
| BT032/31 | [REDACTED] | *Accommodation Works |
| BT032/32 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
|          |            |                      |
| BT032/33 | [REDACTED] | Scheme Works         |
| BT032/34 | [REDACTED] | Scheme Works         |
| BT032/35 | [REDACTED] | Scheme Works         |
| BT032/37 | [REDACTED] | Scheme Works         |
| BT032/38 | [REDACTED] | Scheme Works         |
| BT032/39 | [REDACTED] | Scheme Works         |
| BT032/43 | [REDACTED] | *Accommodation Works |
| BT032/44 | [REDACTED] | *Accommodation Works |
| BT032/45 | [REDACTED] | Scheme Works         |
| BT032/46 | [REDACTED] | Scheme Works         |



**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                                   |                      |
|------------------------------------------------------|-----------------------------------|----------------------|
| <b>SCHEDULE A:</b>                                   |                                   |                      |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                                   |                      |
| <b>REFER TO DRAWING NUMBER:</b> P246600/ACCO/2/14040 |                                   |                      |
| <b>OWNER(S):</b>                                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                           | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                        |                                   |                      |
| <b>Ref No.</b>                                       | <b>Requirements</b>               | <b>Comments</b>      |
| BT033/01                                             | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                     |                                   |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|
| <b>REFER TO DRAWING NUMBER:</b> P246600/ACCO/2/14041                                                                            |                     |                                   |
| <b>OWNER(S):</b>                                                                                                                |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                                                                                                      |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                     |                                   |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b> | <b>Comments</b>                   |
| BT034/01                                                                                                                        | [REDACTED]          | Scheme Works                      |
| BT034/02                                                                                                                        | [REDACTED]          | *Accommodation Works              |
| BT034/04                                                                                                                        | [REDACTED]          | Scheme Works                      |
| BT034/05                                                                                                                        | [REDACTED]          | Scheme Works                      |
| BT034/07                                                                                                                        | [REDACTED]          | *Accommodation Works              |
| BT034/10                                                                                                                        | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

| <b>A90 ABERDEEN WESTERN PERIPHERAL ROUTE<br/>SPECIAL ROAD SCHEME<br/>SCHEDULE A:<br/>ACCOMMODATION WORKS &amp; SCHEME WORKS</b> |                                   |                      |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>REFER TO DRAWING NUMBER:</b> P246600/ACCO/2/14042                                                                            |                                   |                      |
| <b>OWNER(S):</b>                                                                                                                | <b>LESSEE(S) AND OCCUPIER(S):</b> |                      |
| [REDACTED]                                                                                                                      | Owners                            |                      |
| <b>LIST OF WORKS REQUIRED</b>                                                                                                   |                                   |                      |
| <b>Ref No.</b>                                                                                                                  | <b>Requirements</b>               | <b>Comments</b>      |
| BT035/01                                                                                                                        | [REDACTED]                        | *Accommodation Works |
| BT035/02                                                                                                                        | [REDACTED]                        | Scheme Works         |
| BT035/04                                                                                                                        | [REDACTED]                        | *Accommodation Works |
| BT035/05                                                                                                                        | [REDACTED]                        | Scheme Works         |
| BT035/06                                                                                                                        | [REDACTED]                        | *Accommodation Works |
| BT035/08                                                                                                                        | [REDACTED]                        | Scheme Works         |
| BT035/09                                                                                                                        | [REDACTED]                        | *Accommodation Works |
| BT035/10                                                                                                                        | [REDACTED]                        | *Accommodation Works |
| BT035/13                                                                                                                        | [REDACTED]                        | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
|          |            |                      |
| BT035/14 | [REDACTED] | *Accommodation Works |
| BT035/15 | [REDACTED] | Scheme Works         |
| BT035/16 | [REDACTED] | Scheme Works         |
| BT035/18 | [REDACTED] | *Accommodation Works |
| BT035/19 | [REDACTED] | *Accommodation Works |
| BT035/21 | [REDACTED] | *Accommodation Works |
| BT035/23 | [REDACTED] | *Accommodation Works |
| BT035/25 | [REDACTED] | *Accommodation Works |
| BT035/26 | [REDACTED] | Scheme Works         |
| BT035/29 | [REDACTED] | Scheme Works         |
| BT035/30 | [REDACTED] | Scheme Works         |
| BT035/32 | [REDACTED] | *Accommodation Works |
| BT035/33 | [REDACTED] | Scheme Works         |
| BT035/34 | [REDACTED] | *Accommodation Works |

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**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
|          |            |                      |
| BT035/36 | [REDACTED] | *Accommodation Works |
| BT035/37 | [REDACTED] | *Accommodation Works |
| BT035/38 | [REDACTED] | Scheme Works         |
| BT035/39 | [REDACTED] | *Accommodation Works |

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                     |                                   |
|------------------------------------------------------|---------------------|-----------------------------------|
| <b>SCHEDULE A:</b>                                   |                     |                                   |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                     |                                   |
| <b>REFER TO DRAWING NUMBER: P246600/ACCO/2/14043</b> |                     |                                   |
| <b>OWNER(S):</b>                                     |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                           |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                        |                     |                                   |
| <b>Ref No.</b>                                       | <b>Requirements</b> | <b>Comments</b>                   |
| BT036/01                                             | [REDACTED]          | *Accommodation Works              |
| BT036/02                                             | [REDACTED]          | Scheme Works                      |
| BT036/03                                             | [REDACTED]          | *Accommodation Works              |
| BT036/05                                             | [REDACTED]          | Scheme Works                      |
| BT036/07                                             | [REDACTED]          | *Accommodation Works              |
| BT036/09                                             | [REDACTED]          | *Accommodation Works              |
| BT036/11                                             | [REDACTED]          | *Accommodation Works              |
| BT036/12                                             | [REDACTED]          | Scheme Works                      |
| BT036/14                                             | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
| BT036/15 | [REDACTED] | Scheme Works         |
| BT036/16 | [REDACTED] | *Accommodation Works |
| BT036/20 | [REDACTED] | *Accommodation Works |
| BT036/22 | [REDACTED] | *Accommodation Works |
| BT036/23 | [REDACTED] | Scheme Works         |
| BT036/24 | [REDACTED] | *Accommodation Works |
| BT036/27 | [REDACTED] | Scheme Works         |

**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                     |                                   |
|------------------------------------------------------|---------------------|-----------------------------------|
| <b>SCHEDULE A:</b>                                   |                     |                                   |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> P246600/ACCO/2/14046 |                     |                                   |
| <b>OWNER(S):</b>                                     |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                           |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                        |                     |                                   |
| <b>Ref No.</b>                                       | <b>Requirements</b> | <b>Comments</b>                   |
| BT039/01                                             | [REDACTED]          | *Accommodation Works              |
| BT039/02                                             | [REDACTED]          | Scheme Works                      |
| BT039/03                                             | [REDACTED]          | *Accommodation Works              |
| BT039/07                                             | [REDACTED]          | *Accommodation Works              |
| BT039/09                                             | [REDACTED]          | *Accommodation Works              |
| BT039/11                                             | [REDACTED]          | Scheme Works                      |



**Appendix 1/15: Accommodation Works**

| <b>AWPR B-T ROAD SCHEME</b>                          |                     |                                   |
|------------------------------------------------------|---------------------|-----------------------------------|
| <b>SCHEDULE A:</b>                                   |                     |                                   |
| <b>ACCOMMODATION WORKS &amp; SCHEME WORKS</b>        |                     |                                   |
| <b>REFER TO DRAWING NUMBER:</b> P246600/ACCO/2/14045 |                     |                                   |
| <b>OWNER(S):</b>                                     |                     | <b>LESSEE(S) AND OCCUPIER(S):</b> |
| [REDACTED]                                           |                     | Owners                            |
| <b>LIST OF WORKS REQUIRED</b>                        |                     |                                   |
| <b>Ref No.</b>                                       | <b>Requirements</b> | <b>Comments</b>                   |
| BT040/01                                             | [REDACTED]          | *Accommodation Works              |
| BT040/03                                             | [REDACTED]          | *Accommodation Works              |
| BT040/05                                             | [REDACTED]          | *Accommodation Works              |
| BT040/07                                             | [REDACTED]          | Scheme Works                      |
| BT040/08                                             | [REDACTED]          | *Accommodation Works              |
| BT040/11                                             | [REDACTED]          | *Accommodation Works              |
| BT040/12                                             | [REDACTED]          | Scheme Works                      |
| BT040/17                                             | [REDACTED]          | *Accommodation Works              |
| BT040/21                                             | [REDACTED]          | *Accommodation Works              |

**Appendix 1/15: Accommodation Works**

|          |            |                      |
|----------|------------|----------------------|
| BT040/23 | [REDACTED] | *Accommodation Works |
| BT040/29 | [REDACTED] | *Accommodation Works |
| BT040/30 | [REDACTED] | *Accommodation Works |
| BT040/31 | [REDACTED] | Scheme Works         |
| BT040/33 | [REDACTED] | *Accommodation Works |

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus****1 Indicative Schedule of Statutory Undertakers' Works**

- 1.1 Notwithstanding any information provided in this Appendix 1/16 'Schedule of Works to Statutory Undertakers' Apparatus' for the design, execution and completion of the Works, the Company shall consult and comply with the requirements of all Statutory Undertakers, Private Apparatus owners and others affected by the New Works as necessary to determine the effect of the design, execution and completion of the New Works on Statutory Undertakers' Apparatus and Private Apparatus, and to arrange any alterations of any Statutory Undertakers' Apparatus or Private Apparatus which, in the opinion of the Statutory Undertakers or Private Apparatus owners, may be necessary for or resulting from the design, construction and completion of the New Works.
- 1.2 The Company shall make arrangements with the Statutory Undertakers and others concerned for the co-ordination and phasing of the design, construction and completion of the New Works with all Statutory Undertakers' Works and works of others concerned required to be carried out concurrently with the design, construction and completion of the New Works.
- 1.3 The Company shall consult, and comply with the requirements of, all Statutory Undertakers and others concerned in connection with diversion routes, road closures, and interruptions to supplies and the like while Appendix 1/16 Works, Additional Appendix 1/16 Works, Statutory Undertakers' Works and Private Apparatus Works are being carried out.
- 1.4 The Company shall comply with any periods of notice being given by the Statutory Undertakers and others concerned. Any such compliance by the Company shall not relieve the Company of any other obligations under this Agreement.
- 1.5 The Company shall satisfy himself as to the exact location of all Statutory Undertakers' Apparatus and Private Apparatus prior to carrying out work in any part of the Site.
- 1.6 Statutory Undertakers' Apparatus and / or Private Apparatus to individual properties have not generally been shown on the drawings listed in Appendix 0/4 to the Specification.
- 1.7 The Company shall satisfy himself that the design, construction and completion of the New Works takes account of all existing Statutory Undertakers' Apparatus and Private Apparatus whether or not such existing Statutory Undertakers' Apparatus and / or Private Apparatus is shown on any drawings listed in Appendix 0/4 to the Specification.
- 1.8 Disconnected Statutory Undertakers' Apparatus and Private Apparatus shall only be removed where the prior written consent of the Statutory Undertakers and relevant owners of Private Apparatus has been obtained by the Company or where otherwise approved by the Contracting Authority in writing.
- 1.9 The names, addresses and telephone numbers of the Statutory Undertakers, Private Apparatus owners and others affected with existing 'known' Statutory Undertakers' and Private Apparatus in the locality of the Site include, but are not limited to, those described below in Table 1/16A as 'Known Statutory Undertakers, Private Apparatus owners and others affected'.
- 1.10 Notwithstanding the names, addresses and telephones numbers of the Statutory Undertakers, Private Apparatus owners and others affected with Statutory and Private Undertakers' Apparatus in the locality of the Site including, but not limited to, those described in Table 1/16A below or the Statutory Undertakers, Private Apparatus owners and others affected referred to elsewhere in this Agreement, the Company shall satisfy himself as part of the design, construction and completion of the New Works that he has consulted and complied with the requirements of all Statutory Undertakers, Private

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

Apparatus owners and others affected and any others affected by the design, construction and completion of the New Works.

- 1.11 If the Company locates any Apparatus which was unknown to the Parties as at 17 April 2014 and which the Company demonstrates to the satisfaction of the Contracting Authority may be affected by the New Works (and in this context the New Works shall be restricted to those New Works which would have been required had the Baseline Apparatus Design been adopted by the Company without change) the Company shall prepare a revised Appendix 1/16 detailing such additional Diversionary Works (Type 1) and submit the same to the Contracting Authority. The Parties shall meet as soon as reasonably practicable thereafter to agree whether Appendix 1/16 should be so revised.

Baseline Apparatus Design means the draft design prepared by or on behalf of the Contracting Authority and used as the basis for the preparation of the Diversionary Works (Type 1), a copy of which draft design is attached to this Agreement on disk as Attachment 2

**2 General**

- 2.1 It shall be the responsibility of the Company to agree the location of service connections or access chambers for Statutory Undertakers' Apparatus and Private Apparatus with the relevant Statutory Undertaker, owner of the Private Apparatus and the Contracting Authority.
- 2.2 Wherever practical the Company shall ensure that no service connections or access chambers for Statutory Undertakers' Apparatus and Private Apparatus, except Traffic Scotland Equipment ("TSE"), shall be situated within the boundary as delineated by the permanent motorway fence and within the trunk road boundary. Wherever practical the Company shall ensure that no Statutory Undertakers' Apparatus or Private Apparatus, except Traffic Scotland Equipment, shall be situated longitudinally within the boundary as delineated by the permanent Trunk Road fence and within the trunk road boundary. The Company shall ensure that new Statutory Undertakers, Private Apparatus owners and others chamber covers which shall be required, shall not be permitted within the road pavement of all roads described in Table 1 of Schedule 19 of the Agreement.
- 2.3 The Company shall be responsible for the protection of all Statutory Undertakers' Apparatus and Private Apparatus during the construction and completion of the New Works and shall comply with the Special Requirements of the affected Statutory Undertaker, Private Apparatus owner or any other person concerned as described in these New Work's Requirements subject to approval of the Statutory Undertaker, Private Apparatus owner or other person concerned.
- 2.4 In respect of existing Statutory Undertakers' Apparatus or Private Apparatus, the Company shall raise, lower or relocate the covers of existing manholes, chambers, catchpits, gullies or otherwise where necessary and / or where resulting from the design, construction and completion of the New Works. Prior approval of the asset owner is required in this respect.
- 2.5 The Company shall ensure that all Private Apparatus to be diverted shall be diverted to a standard equivalent to that which would be provided by an equivalent Statutory Undertaker or to a higher standard where this existed prior to the New Works commencing. Except for TSE, ducting, chambers and drawpits shall be provided by the Company as required to allow the service, supply or otherwise to be accessed and maintained from points wholly out with the New Works wherever possible.
- 2.6 The Company shall be responsible for all traffic management associated with the New Works in connection with all Appendix 1/16 Works, Additional Appendix 1/16 Works and Private Apparatus Works required to be carried out in accordance with this Agreement,

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

unless otherwise agreed with the Statutory Undertaker or Private Apparatus owner. Provision of traffic management shall be in accordance with the requirements of Appendix 1/17.

- 2.7 Table 1/16B only lists those works to existing Statutory Undertakers', Private Apparatus owners and others affected Apparatus that are necessary for the design, construction and completion of the New Works.
- 2.7.1 The 'Design Period' and 'Design and Material Order Period' as relevant, shown in Table 1/16B shall commence when the relevant Statutory Undertaker, Private Apparatus owners and others affected has received the associated C6 (or equivalent) notice from the Company and any required payment has been received. The 'Duration of Material Order and Notification to Attend Site' and the 'Notification Period to Attend Site' as relevant, shown in Table 1/16B shall commence when the Statutory Undertakers, Private Apparatus owners and others affected have received notification from the Company. It shall be the Company's responsibility to confirm all timescales with the Statutory Undertakers, Private Apparatus owners and others affected and others concerned.
- 2.7.2 The 'Main Works by Company' items identified for each diversion contained in Table 1/16B are those items which the Company shall design, execute and complete to enable the Appendix 1/16 Works to be completed.
- 2.7.3 The 'Works by Statutory Undertakers', Private Apparatus owners and others affected items identified for each diversion contained in Table 1/16B are those items which shall be carried out by the Statutory Undertakers, Private Apparatus owners and others affected or their third party contractors to enable the Appendix 1/16 Works to be completed.
- 2.7.4 Notwithstanding the provisions of Table 1/16B the Company shall carry out all works required in order to consult and comply with the requirements of the Statutory Undertakers, Private Apparatus owners and others affected and the other provisions of the Agreement.
- 2.8 The Company shall provide setting out instructions to Statutory Undertakers, Private Apparatus owners and others affected and supervise Statutory Undertakers, Private Apparatus owners and others affected as necessary to avoid any delay with regard to the positioning of Statutory Undertakers', Private Apparatus owners and others affected Apparatus.
- 2.9 The Company shall notify the Contracting Authority of all meetings between the Company and any Statutory Undertaker, Private Apparatus owners and others affected at least seven days in advance to allow the Contracting Authority the opportunity to attend the meeting as an observer.
- 2.10 The Company shall supply copies of all correspondence between the Company and any Statutory Undertaker, Private Apparatus owners and others affected within seven days of issue or receipt as appropriate.

## Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus****Table 1/16A – Known Statutory Undertakers, Private Apparatus owners and others affected**

| <b>Statutory or Private Undertaker Name</b>            | <b>Address</b>                                                                                                                                      | <b>Contact Name(s)</b> | <b>Telephone Number</b> |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------------|
| [REDACTED]                                             | [REDACTED]                                                                                                                                          | [REDACTED]             | [REDACTED]              |
| BT Openreach                                           | BT Openreach<br>Aberdeen Central Telephone Exchange,<br>Ground Floor Office Right,<br>47-49 Bon Accord Street,<br>Scotland,<br>Aberdeen<br>AB11 6EA | [REDACTED]             | [REDACTED]              |
| Vodafone<br>(Formerly Cable & Wireless Worldwide)      | Vodafone<br>Fibre Services - Design & Build<br>1 Hunter Road<br>Kirkton Campus South<br>Livingston<br>EH54 7DH                                      | [REDACTED]             | [REDACTED]              |
| Scotland Gas Networks<br><u>(Balmedie to Tipperty)</u> | Scotland Gas Networks<br>Perrie Street,<br>Dundee<br>DD2 2RD                                                                                        | [REDACTED]             | [REDACTED]              |
| Scotland Gas Networks – Distribution<br><u>(AWPR)</u>  | Scotland Gas Networks<br>Axis House<br>5 Lonehead Drive<br>Newbridge<br>Edinburgh<br>EH28 8TG                                                       | [REDACTED]             | [REDACTED]              |
| Scotland Gas Networks – Transmission<br><u>(AWPR)</u>  | Scotland Gas Networks<br>Axis House<br>5 Lonehead Drive<br>Newbridge<br>Edinburgh, EH28 8TG                                                         | [REDACTED]             | [REDACTED]              |
| SSE Power - Distribution                               | SSE<br>North East Depot<br>200 Ashgrove Road West<br>Aberdeen<br>AB16 5NY                                                                           | [REDACTED]             | [REDACTED]              |
| SSE Transmission                                       | SSE<br>Inveralmond House<br>200 Dunkeld Road<br>Perth<br>PH1 3AQ                                                                                    | [REDACTED]             | [REDACTED]              |

## Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| <b>Statutory or Private Undertaker Name</b>  | <b>Address</b>                                                                                        | <b>Contact Name(s)</b> | <b>Telephone Number</b> |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------|-------------------------|
| SSE Telecoms (AWPR)                          | SSE<br>Inveralmond House<br>200 Dunkeld Road<br>Perth<br>PH1 3AQ                                      | [REDACTED]             | [REDACTED]              |
| SSE Telecoms ( <u>Balmedie to Tippetty</u> ) | SSE<br>Inveralmond House<br>200 Dunkeld Road<br>Perth<br>PH1 3AQ                                      | [REDACTED]             | [REDACTED]              |
| Scottish Water - Sewer                       | The Bridge<br>Buchanan Gate Business Park<br>Cumbernauld Road<br>Stepps<br>Glasgow<br>G33 6FB         | [REDACTED]             | [REDACTED]              |
| Scottish Water - Water                       | The Bridge<br>Buchanan Gate Business Park<br>Cumbernauld Road<br>Stepps<br>Glasgow<br>G33 6FB         | [REDACTED]             | [REDACTED]              |
| [REDACTED]                                   | [REDACTED]                                                                                            | [REDACTED]             | [REDACTED]              |
| Ramsay & Chalmers (Shell Consultants)        | Ramsay & Chalmers<br>Chattan Mews Offices<br>18 Chattan Place<br>Aberdeen, AB10 6RD                   | [REDACTED]             | [REDACTED]              |
| Trafficmaster Ltd                            | Infrastructure Maintenance Team<br>Trafficmaster Ltd<br>University Way<br>Cranfield<br>Beds, MK43 0TR | [REDACTED]             | [REDACTED]              |

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

**Table 1/16B – Indicative Schedule of Statutory Undertakers’ Works**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group * | Main Works by Company | Works by Statutory Undertakers’, Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|---------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| [REDACTED]                                                  |                          |         |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                       |                                                                               |                                  |                                    |                         |

[REDACTED]



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Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|---------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| [REDACTED]                                                  |                          |         |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                       |                                                                               |                                  |                                    |                         |

[REDACTED]

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Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|---------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| [REDACTED]                                                  |                          |         |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                       |                                                                               |                                  |                                    |                         |

[REDACTED]

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Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|---------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| [REDACTED]                                                  |                          |         |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                       |                                                                               |                                  |                                    |                         |

[REDACTED]

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Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|---------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| [REDACTED]                                                  |                          |         |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                       |                                                                               |                                  |                                    |                         |

[REDACTED]

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Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|---------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| [REDACTED]                                                  |                          |         |                       |                                                                               |                                  |                                    |                         |
| <b>[REDACTED]</b>                                           |                          |         |                       |                                                                               |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                                                                          |                                                                               |                                  |                                    |                         |
| BT01<br>(BT ref 101)<br>Drg<br>B1033200/CD/<br>2700/BT/001  | <b>Stonehaven Junction</b><br>Provide new 110mm HDPE duct and associated joint boxes in proposed northern verge of B979, north part of proposed roundabout and north verge of proposed Megray Farm Road.<br>Provide new 110mm HDPE duct and associated joint boxes in west verge of B979 from Railway Bridge to New Mains of Ury and provide 110mm HDPE duct across B979 at New Mains of Ury.<br>Provide new 110mm HDPE “insurance” duct<br>Divert cables into temporary and permanent ducts as required. | B       |                                                                          | Design diversions.                                                            | 8 weeks                          | 8 weeks                            | 8 weeks                 |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | Review diversion design.                                                 | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | Provide traffic management.                                              | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | Consult and comply with Statutory Undertaker's requirements              | Install new ducts and chambers.                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | Undertake any required protection works.                                 | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | Recover or demolish redundant ducts.                                     | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | Demolish redundant                                                       | Testing and                                                                   |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Group * | Main Works by Company                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |                                                                                   |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         | chambers.                                                                         | commissioning.                                                                |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |                                                                                   | Recover redundant cable.                                                      |                                  |                                    |                         |
| BT02<br>(BT ref 102)<br>Drg<br>B1033200/CD/<br>2700/BT/003  | <b>U89K Auquorthies to Ury Road.</b><br>In advance of main works provide HDPE duct across area of proposed fill in advance of fill operations extended out with limits of earthworks as 110mm HDPE duct laid overground to points in south verge of U89K clear of proposed works.<br><br>Install joint boxes at interception points.<br><br>Provide new 110mm HDPE duct in south verge of realigned U89K.<br><br>Divert cables into temporary and permanent ducts as required. | B       |                                                                                   | Design diversions.                                                            | 8 weeks                          | 8 weeks                            | 4 weeks                 |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         | Review diversion design.                                                          | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         | Agree measures to safeguard existing apparatus with Statutory Undertaker          | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         | Provide traffic management.                                                       | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         | Consult and comply with Statutory Undertaker's requirements                       | Install new ducts and chambers.                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         | Undertake any required protection works including installation of temporary ducts | Inspect and supervise.                                                        |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference       | Location and Description                                                                                                                                                                                                                                                                                                                                     | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                           |                                                                                                                                                                                                                                                                                                                                                              |         |                                                                          |                                                                               |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                                                              |         | Recover or demolish redundant ducts.                                     | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                                                              |         | Install duct through underpass structure                                 |                                                                               |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                                                              |         |                                                                          | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                                                              |         |                                                                          | Recover redundant cable.                                                      |                                  |                                    |                         |
| BT03<br>(BT ref 103 &103A)<br>Drg B1033200/CD/2700/BT/004 and 005 | <b>Kempstone Hill</b><br>In advance of main works lay out armoured cable to west of LMA and under the proposed mainline at approximate chainage 2500m with sections of buried 110mm HDPE duct as required.<br>Recover out of use poles and overhead cables.<br>Provide new 110mm HDPE duct and associated joint box in east verge of U88K to U89K Link Road. | A/B     |                                                                          | Design diversions.                                                            | 8 weeks                          | 8 weeks                            | 3 weeks                 |
|                                                                   |                                                                                                                                                                                                                                                                                                                                                              |         | Review diversion design.                                                 | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                                                              |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                                                              |         | Provide traffic management.                                              | Agree traffic management                                                      |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                                                              |         | Consult and comply with Statutory Undertaker's                           | Install new ducts and chambers.                                               |                                  |                                    |                         |



## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Group * | Main Works by Company                                                                                                                                                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                      | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |                                                                                                                                                                                                          |                                                                                                                                                                                    |                                  |                                    |                         |
|                                                             | <p>Divert cables into temporary and permanent ducts as required.</p> <p><b>U88K Fishermyre</b></p> <p>In advance of main works lay out armoured cable to east of U88K clear of proposed works laid in HDPE duct across area of proposed fill in advance of fill operations and laid in 110mm HDPE duct as required elsewhere to points in east verge clear of proposed works.</p> <p>If necessary install new poles at interception points.</p> <p>Recover out of use poles and overhead cables.</p> <p>Provide new 110mm HDPE duct and associated joint boxes in east verge of realigned U88K.</p> <p>Divert cables into temporary and permanent ducts as required.</p> |         | <p>requirements</p> <p>Undertake any required protection works including installation of temporary ducts</p> <p>Recover or demolish redundant ducts.</p> <p>Install duct through underpass structure</p> | <p>Inspect and supervise.</p> <p>Install new cables. Undertake jointing, reinstatement and connection Works.</p> <p>Testing and commissioning.</p> <p>Recover redundant cable.</p> |                                  |                                    |                         |
| BT04<br>(BT ref 104)                                        | <b>C12K Bridge of Muchalls to Netherley Road</b><br>In advance of main works build                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | B       |                                                                                                                                                                                                          | Design diversions.<br>Review diversion                                                                                                                                             | 8 weeks                          | 8 weeks                            | 5 weeks                 |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                             | Group * | Main Works by Company                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                                                   |                                                                               |                                  |                                    |                         |
| Drg B1033200/CD/2700/BT/007                                 | interception joint boxes at either end of anticipated temporary road diversion and install road crossings. Install temporary 110mm HDPE duct overground along temporary fenceline.<br><br>Provide new 110mm HDPE duct within structure and 110mm HDPE duct outwith structure in south verge of new carriageway.<br><br>Divert cables into temporary and permanent ducts as required. |         | design.                                                                           | design.                                                                       |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                      |         | Agree measures to safeguard existing apparatus with Statutory Undertaker          | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                      |         | Provide traffic management.                                                       | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                      |         | Consult and comply with Statutory Undertaker's requirements                       | Install new ducts and chambers.                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                      |         | Undertake any required protection works including installation of temporary ducts | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                      |         | Install new ducts in structure                                                    |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                      |         | Recover or demolish redundant ducts.                                              | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Group * | Main Works by Company                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |                                                                                   |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |                                                                                   | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |                                                                                   | Recover redundant cable.                                                      |                                  |                                    |                         |
| BT05<br>(BT ref 105)<br>Drg<br>B1033200/CD/<br>2700/BT/009  | <b>North Cookney</b><br><b>C25K Muchalls to Burnhead Road</b><br>In advance of construction of proposed east verge of realigned C25K build interception joint boxes at either end and install temporary 90mm PVC duct overground.<br>Provide new 110mm HDPE duct, associated joint boxes and road crossings in east verge of realigned C25K.<br>Divert cables into temporary and permanent ducts as required.<br><b>C24K Skateraw to Cookney Road</b><br>In advance of construction of proposed south verge of realigned | B       |                                                                                   | Design diversions.                                                            | 10 weeks                         | 8 weeks                            | 9 weeks                 |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         | Review diversion design.                                                          | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         | Agree measures to safeguard existing apparatus with Statutory Undertaker          | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         | Provide traffic management.                                                       | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         | Consult and comply with Statutory Undertaker's requirements                       | Install new ducts and chambers.                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         | Undertake any required protection works including installation of temporary ducts | Inspect and supervise.                                                        |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                  | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                           |         |                                                                          |                                                                               |                                  |                                    |                         |
|                                                             | C24K build interception joint boxes at west end and install temporary 90mm PVC duct overground.<br><br>Provide new 110mm HDPE duct within structure and 110mm HDPE duct out with structure in south verge of new carriageway.<br><br>Divert cables into temporary and permanent ducts as required.                                                                                                        |         | Install new ducts in structure                                           |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                           |         | Recover or demolish redundant ducts.                                     | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                           |         |                                                                          | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                           |         |                                                                          | Recover redundant cable.                                                      |                                  |                                    |                         |
| BT06<br>(BT ref 106)<br>Drg<br>B1033200/CD/<br>2700/BT/009  | <b>West Stoneyhill Access Road</b><br><br>In advance of construction of upgraded road from Stoneyhill House northwards to existing West Stoneyhill Junction build joint boxes at interceptor points, lay out armoured cable clear of proposed works with 110mm HDPE ducts as required.<br><br>Expose cables feeding Meadowhead and Stoneyhill House, protect in split duct and bury clear of excavations. | B       |                                                                          | Design diversions.                                                            | 8 weeks                          | 8 weeks                            | 7 weeks                 |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                           |         | Review diversion design.                                                 | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                           |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                           |         | Provide traffic management.                                              | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                           |         | Consult and comply with Statutory Undertaker's                           | Install new ducts and chambers.                                               |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference    | Location and Description                                                                                                                                                                                                                             | Group * | Main Works by Company                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                        |                                                                                                                                                                                                                                                      |         |                                                                                   |                                                                               |                                  |                                    |                         |
|                                                                | Provide new 110mm HDPE duct, and associated joint boxes and road crossings in east verge of new West Stoneyhill Access Road and south verge of North Cookney Croft Access Road.<br><br>Divert cables into temporary and permanent ducts as required. |         | requirements                                                                      |                                                                               |                                  |                                    |                         |
|                                                                |                                                                                                                                                                                                                                                      |         | Undertake any required protection works including installation of temporary ducts | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                                |                                                                                                                                                                                                                                                      |         | Recover or demolish redundant ducts.                                              | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |
|                                                                |                                                                                                                                                                                                                                                      |         |                                                                                   | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                                |                                                                                                                                                                                                                                                      |         |                                                                                   | Recover redundant cable.                                                      |                                  |                                    |                         |
| BT07<br>(BT ref 107)<br><br>Drg<br>B1033200/CD/<br>2700/BT/012 | <b>C13K Lairhillock to Portlethen Road</b><br><br>In advance of main works build joint boxes at interceptor points and lay out armoured cable to north of C13K clear of proposed works laid in 110mm HDPE duct as required.                          | B       |                                                                                   | Design diversions.                                                            | 10 weeks                         | 8 weeks                            | 9 weeks                 |
|                                                                |                                                                                                                                                                                                                                                      |         | Review diversion design.                                                          | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                |                                                                                                                                                                                                                                                      |         | Agree measures to safeguard existing apparatus with Statutory Undertaker          | Procure apparatus for diversion.                                              |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Group * | Main Works by Company                                                                                                                                                                                                                                                            | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                             | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                           |                                  |                                    |                         |
|                                                             | <p>Provide new 110mm HDPE duct within structure and 110mm HDPE duct out with structure in north verge of new carriageway.</p> <p>Divert cables into temporary and permanent ducts as required.</p> <p><b>North Rothnick Access Road</b></p> <p>In advance of main works build joint boxes at interceptor points and lay out armoured cable to west of Access Road clear of proposed works laid in 110mm HDPE duct as required.</p> <p>Provide new 110mm HDPE duct in west verge of Access Road.</p> <p>Divert cables into temporary and permanent ducts as required.</p> |         | <p>Provide traffic management.</p> <p>Consult and comply with Statutory Undertaker's requirements</p> <p>Undertake any required protection works including installation of temporary ducts</p> <p>Install new ducts in structure</p> <p>Recover or demolish redundant ducts.</p> | <p>Agree traffic management</p> <p>Install new ducts and chambers.</p> <p>Inspect and supervise.</p> <p>Install new cables. Undertake jointing, reinstatement and connection Works.</p> <p>Testing and commissioning.</p> <p>Recover redundant cable.</p> |                                  |                                    |                         |
| BT08                                                        | <b>C5K Greens of Crynoch.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | B       |                                                                                                                                                                                                                                                                                  | Design diversions.                                                                                                                                                                                                                                        | 10 weeks                         | 8 weeks                            | 5 weeks                 |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                              | Group * | Main Works by Company                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                       |         |                                                                                   |                                                                               |                                  |                                    |                         |
| (BT ref 108)<br>Drg<br>B1033200/CD/<br>2700/BT/014          | In advance of main works erect new poles and install road crossings at either end of anticipated temporary road diversion. Install temporary 110mm HDPE duct overground along temporary fenceline.<br><br>Provide new 110mm HDPE duct within structure and 110mm HDPE duct out with structure in south verge of new carriageway.<br><br>Divert cables into temporary and permanent ducts as required. |         | Review diversion design.                                                          | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                       |         | Agree measures to safeguard existing apparatus with Statutory Undertaker          | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                       |         | Provide traffic management.                                                       | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                       |         | Consult and comply with Statutory Undertaker's requirements                       | Install new ducts and interception poles.                                     |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                       |         | Undertake any required protection works including installation of temporary ducts | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                       |         | Install new ducts in structure                                                    |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                       |         | Recover or demolish redundant ducts.                                              | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference         | Location and Description                                                                                                                                                                                                                                                                                                                                                                                       | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                             |                                                                                                                                                                                                                                                                                                                                                                                                                |         |                                                                          |                                                                               |                                  |                                    |                         |
|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                |         |                                                                          | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                |         |                                                                          | Recover redundant cable.                                                      |                                  |                                    |                         |
| BT09<br>(BT ref 109)<br>Drg<br>B1033200/CD/<br>2700/BT/017 &<br>018 | <b>Kingcausie / Eastland Access Road</b><br>Provide new 110mm HDPE duct under new carriageway at approximate chainage 101125m.<br>Divert cables into temporary and permanent ducts as required.<br><b>B9077 South Deeside Road</b><br>Install new poles clear of proposed works and install 110mm HDPE duct in verge of existing carriageway.<br>Divert cables into temporary and permanent ducts as required. | B       |                                                                          | Design diversions.                                                            | 10 weeks                         | 8 weeks                            | 6 weeks                 |
|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                |         | Review diversion design.                                                 | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                |         | Provide traffic management.                                              | Agree traffic management                                                      |                                  |                                    |                         |
|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                |         | Consult and comply with Statutory Undertaker's requirements              | Install new interception poles.                                               |                                  |                                    |                         |
|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                |         | Undertake any                                                            | Inspect and supervise.                                                        |                                  |                                    |                         |



Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                            | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                                |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                     |         |                                                                          |                                                                               |                                  |                                    |                                                                                                        |
|                                                             |                                                                                                                                                                                                                                                                                                     |         | required protection works.                                               |                                                                               |                                  |                                    |                                                                                                        |
|                                                             |                                                                                                                                                                                                                                                                                                     |         | Install new ducts under mainline                                         | Inspect and supervise.                                                        |                                  |                                    |                                                                                                        |
|                                                             |                                                                                                                                                                                                                                                                                                     |         | Recover or demolish redundant ducts.                                     | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                                                                                                        |
|                                                             |                                                                                                                                                                                                                                                                                                     |         |                                                                          | Testing and commissioning.                                                    |                                  |                                    |                                                                                                        |
|                                                             |                                                                                                                                                                                                                                                                                                     |         |                                                                          | Recover redundant cable and poles.                                            |                                  |                                    |                                                                                                        |
| BT10<br>(BT ref 110)<br>Drg<br>B1033200/CD/<br>2700/BT/019  | <b>Milltimber Brae</b><br>Provide new multiple 110mm HDPE ducts in B979 Milltimber Road between A93 and Milltimber Brae as temporary diversion. Adjust existing joint box levels to suit temporary reopening of A93/Milltimber Brae<br><br>Provide new 4 way 110mm HDPE ducts within north verge of | B       |                                                                          | Design diversions.                                                            | 12 weeks                         | 8 weeks                            | 40 weeks BT Openreach advise BT10 works shall not be concurrent with any other BT openreach diversion. |
|                                                             |                                                                                                                                                                                                                                                                                                     |         | Review diversion design.                                                 | Review diversion design.                                                      |                                  |                                    |                                                                                                        |
|                                                             |                                                                                                                                                                                                                                                                                                     |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion.                                              |                                  |                                    |                                                                                                        |
|                                                             |                                                                                                                                                                                                                                                                                                     |         | Provide traffic management.                                              | Agree traffic management                                                      |                                  |                                    |                                                                                                        |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Group * | Main Works by Company                                              | Works by Statutory Undertakers', Private Apparatus owners and others affected      | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |                                                                    |                                                                                    |                                  |                                    |                         |
|                                                             | <p>structure.</p> <p>Divert cables into temporary and permanent ducts as required.</p> <p><b>A93 North Deeside Road</b></p> <p>In advance of main works install 9 way 110mm HDPE ducts in south verge of anticipated temporary road diversion.</p> <p>Allow for approx. 750m of duct in A93 footpath to be laid for replacement of fibre optic cables.</p> <p>Provide new 10 way 110mm HDPE duct in south verge of structure.</p> <p>Divert cables into temporary and permanent ducts as required.</p> |         | <p>Consult and comply with Statutory Undertaker's requirements</p> | <p>Install new ducts and joint boxes.</p>                                          |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | <p>Undertake any required protection works.</p>                    | <p>Adjust existing joint boxes.</p>                                                |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | <p>Install new ducts in structures</p>                             | <p>Inspect and supervise</p>                                                       |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | <p>Recover or demolish redundant ducts.</p>                        | <p>Install new cables. Undertake jointing, reinstatement and connection Works.</p> |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |                                                                    | <p>Testing and commissioning.</p>                                                  |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |                                                                    | <p>Recover redundant cable and poles</p>                                           |                                  |                                    |                         |
| BT11<br>(BT ref 111)<br>Drg<br>B1033200/CD/<br>2700/BT/020  | <p><b>Milltimber Junction</b></p> <p>Provide 2 new 110mm HDPE ducts and associated joint boxes and road crossings in north verge of New Culter House Road, east verge of Milltimber Northbound</p>                                                                                                                                                                                                                                                                                                     | B       |                                                                    | <p>Design diversions.</p>                                                          | 10 weeks                         | 8 weeks                            | 15 weeks                |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | <p>Review diversion design.</p>                                    | <p>Review diversion design.</p>                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | <p>Agree measures to safeguard existing</p>                        | <p>Procure apparatus for diversion.</p>                                            |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                           | Group * | Main Works by Company                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                    |         |                                                             |                                                                               |                                  |                                    |                         |
|                                                             | Diverge Slip Road, south verge of Milltimber Junction Overbridge and west verge of NMU track.<br><br>Divert cables into temporary and permanent ducts as required. |         | apparatus with Statutory Undertaker                         | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                    |         | Provide traffic management.                                 | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                    |         | Consult and comply with Statutory Undertaker's requirements | Install new ducts and joint boxes.                                            |                                  |                                    |                         |
|                                                             |                                                                                                                                                                    |         | Undertake any required protection works.                    |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                    |         | Install new ducts in structures                             | Inspect and supervise                                                         |                                  |                                    |                         |
|                                                             |                                                                                                                                                                    |         | Recover or demolish redundant ducts.                        | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |
|                                                             |                                                                                                                                                                    |         |                                                             | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                    |         |                                                             | Recover redundant cable.                                                      |                                  |                                    |                         |
| BT12                                                        | <b>Hill of Milltimber</b>                                                                                                                                          | B       |                                                             | Design diversions.                                                            | 8 weeks                          | 8 weeks                            | 7 weeks                 |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Group * | Main Works by Company                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |                                                                                   |                                                                               |                                  |                                    |                         |
| (BT ref 112)<br>Drg<br>B1033200/CD/<br>2700/BT/022          | In advance of main works build joint boxes at interceptor points and lay out armoured cable to east of Hill of Milltimber Access Road, south of anticipated temporary diversion of Contlaw Road and east of Laggan Cottage Access Road clear of proposed works laid in 110mm HDPE duct as required.<br><br>Install new 110mm HDPE duct and associated joint boxes in east verge of Hill of Milltimber Access Road, south verge of Contlaw Road and east verge of Laggan Cottage Access Road.<br><br>Provide new 110mm HDPE duct within structure.<br><br>Divert cables into temporary and permanent ducts as required |         | Review diversion design.                                                          | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         | Agree measures to safeguard existing apparatus with Statutory Undertaker          | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         | Provide traffic management.                                                       | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         | Consult and comply with Statutory Undertaker's requirements                       | Install new ducts and joint boxes.                                            |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         | Undertake any required protection works including installation of temporary ducts |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         | Install new ducts in structures                                                   | Inspect and supervise                                                         |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         | Recover or demolish redundant ducts.                                              | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Group * | Main Works by Company                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                                   |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                                   | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                                   | Recover redundant cable and poles.                                            |                                  |                                    |                         |
| BT13<br>(BT ref 113)<br>Drg<br>B1033200/CD/<br>2700/BT/024  | <b>C127C Silverburn Road</b><br>In advance of main works erect new poles and install joint boxes and road crossings at either end of proposed works. Lay out armoured cable to north of C127C clear of proposed works laid in 110mm HDPE duct as required.<br><br>Install new 110mm HDPE duct and associated joint boxes in south verge of C127C.<br><br>Provide new 110mm HDPE duct within structure.<br><br>Divert cables into temporary and permanent ducts as required.<br><br><b>Cairnpark</b><br>In advance of main works erect new poles and overhead line clear of new access road and culvert. | B       |                                                                                   | Design diversions.                                                            | 10 weeks                         | 8 weeks                            | 10 weeks                |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Review diversion design.                                                          | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Agree measures to safeguard existing apparatus with Statutory Undertaker          | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Provide traffic management.                                                       | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Consult and comply with Statutory Undertaker's requirements                       | Install new ducts, poles and joint boxes.                                     |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Undertake any required protection works including installation of temporary ducts |                                                                               |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Group * | Main Works by Company                                                              | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                               | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                                    |                                                                                                                                                                                             |                                  |                                    |                         |
|                                                             | <p>Install new 110mm HDPE duct in south verge of new access track.</p> <p>Divert cables into temporary and permanent ducts as required.</p> <p><b>Gairn</b></p> <p>In advance of main works either underground or upgrade existing overhead cable pending diversion of supply via Moss of Auchlea Access Road.</p> <p>Install new 110mm HDPE duct and associated joint boxes in south verge of Gairn Farm Access Track (East) and east verge of Moss of Auchlea Access Road.</p> <p>Provide new 110mm HDPE duct within structure.</p> <p>Install poles and erect overhead cable between Moss of Auchlea Access Road and Gairn.</p> <p>Divert cables into temporary and permanent ducts as required.</p> |         | <p>Install new ducts in structures</p> <p>Recover or demolish redundant ducts.</p> | <p>Inspect and supervise</p> <p>Install new cables. Undertake jointing, reinstatement and connection Works.</p> <p>Testing and commissioning.</p> <p>Recover redundant cable and poles.</p> |                                  |                                    |                         |
| BT14                                                        | <b>A944 South Kingswells</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | B       |                                                                                    | Design diversions.                                                                                                                                                                          | 12 weeks                         | 8 weeks                            | 36 weeks                |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference            | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Group * | Main Works by Company                                                                                                                                                                                                                                                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                                              | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                       |
|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-----------------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                            |                                  |                                    |                                                                                               |
| (BT ref 114)<br>Drg<br>B1033200/CD/<br>2700/BT/025 to<br>027 inclusive | <p><b>Junction.</b></p> <p>Install new 110mm HDPE duct and associated joint boxes in west verge of Moss of Auchlea Access Road.</p> <p>Install new 110mm HDPE duct and associated joint boxes in west verge of Kingsford to Gairlea Road.</p> <p>In advance of main works install joint boxes and manholes at east and west ends of proposed works on A944 to intercept existing cables.</p> <p>Install new 9 x 110mm HDPE ducts and associated joint boxes in south verge of westbound A944.</p> <p>Install new 2 x 110mm HDPE ducts and associated joint boxes in north verge of eastbound A944.</p> <p>Install 110mm HDPE duct and associated joint boxes in west verge of C93C Clintery to Kingsford Road and north verge</p> |         | <p>Review diversion design.</p> <p>Agree measures to safeguard existing apparatus with Statutory Undertaker</p> <p>Provide traffic management.</p> <p>Consult and comply with Statutory Undertaker's requirements</p> <p>Undertake any required protection works.</p> <p>Recover or demolish redundant ducts.</p> | <p>Review diversion design.</p> <p>Procure apparatus for diversion.</p> <p>Agree traffic management</p> <p>Install new ducts, poles and joint boxes.</p> <p>Inspect and supervise</p> <p>Install new cables. Undertake jointing, reinstatement and connection Works.</p> <p>Testing and commissioning.</p> |                                  |                                    | BT Openreach advise BT14 works shall not be concurrent with any other BT openreach diversion. |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference         | Location and Description                                                                                                                                                                                                                                                                                                                                                                       | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                            | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                             |                                                                                                                                                                                                                                                                                                                                                                                                |         |                       |                                                                                                                                                                                                                          |                                  |                                    |                         |
|                                                                     | of Kingsford Industrial Units Access Road.<br>In advance of main works lay out armoured cable to east of existing East Kingsford Track.<br>Install 110mm HDPE duct in east verge of new East Kingsford Access Track.<br>Divert cables into temporary and permanent ducts as required.                                                                                                          |         |                       | Recover redundant cable and poles.                                                                                                                                                                                       |                                  |                                    |                         |
| BT15<br>(BT ref 115)<br>Drg<br>B1033200/CD/<br>2700/BT/028 &<br>029 | <b>Derbeth</b><br>In advance of main works install pole at eastern limit of proposed works to intercept existing overhead cable. Lay out armoured cable to south of existing carriageway clear of proposed works laid in 110mm HDPE duct as required.<br>Install new 110mm HDPE duct and associated joint boxes in north verge of Hill of Derberth Access Road.<br>Provide new 110mm HDPE duct | B       |                       | Design diversions.<br>Review diversion design.<br>Agree measures to safeguard existing apparatus with Statutory Undertaker<br>Provide traffic management.<br>Consult and comply with Statutory Undertaker's requirements | 8 weeks                          | 8 weeks                            | 6 weeks                 |



Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                   | Group * | Main Works by Company                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                            |         |                                                                                   |                                                                               |                                  |                                    |                         |
|                                                             | within structure.<br>Divert cables into temporary and permanent ducts as required.<br>Install new 110mm HDPE duct and associated joint boxes under mainline between existing BT poles at Ch109890m to supply Woodside of Cloghill Property |         | Undertake any required protection works including installation of temporary ducts |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                            |         | Install new ducts in structures and under mainline                                | Inspect and supervise                                                         |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                            |         | Recover or demolish redundant ducts.                                              | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                            |         |                                                                                   | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                            |         |                                                                                   | Recover redundant cable and poles.                                            |                                  |                                    |                         |
| BT16<br>(BT ref 17)<br>Drg                                  | <b>North Kingswells Junction</b><br>In advance of main works install 2x 110mm HDPE ducts and associated joint boxes on existing                                                                                                            | B       |                                                                                   | Design diversions                                                             | 8 weeks                          | 8 weeks                            | 28 weeks                |
|                                                             |                                                                                                                                                                                                                                            |         | Review diversion design.                                                          | Review diversion design.                                                      |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Group * | Main Works by Company                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                                                   |                                                                               |                                  |                                    |                         |
| B1033200/CD/<br>2700/BT/030                                 | <p>Kepplehill Access Track clear of proposed works. Ducts to be extended in both directions towards Kepplehill Reservoir and Hopetoun Reservoir (approx. 1650m) to allow renewal of fibre cable.</p> <p>Install new 2 x 110mm HDPE ducts and associated joint boxes in east verge of Kepplehill Access Track, north verge of North Kingswells Junction Link Road and west verge of North Kingswells Access Track.</p> <p>Provide new 110mm HDPE ducts within structure.</p> <p>Divert cables into temporary and permanent ducts as required.</p> |         | Agree measures to safeguard existing apparatus with Statutory Undertaker          | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Provide traffic management.                                                       | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Consult and comply with Statutory Undertaker's requirements                       | Install new ducts, poles and joint boxes.                                     |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Undertake any required protection works including installation of temporary ducts |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Install new ducts in structure                                                    | Inspect and supervise                                                         |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Recover or demolish redundant ducts.                                              | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                                                   | Testing and commissioning.                                                    |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Group * | Main Works by Company                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |                                                                                   |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |                                                                                   | Recover redundant cable and poles                                             |                                  |                                    |                         |
| BT17<br>(BT ref 18)<br>Drg<br>B1033200/CD/<br>2700/BT/031   | <b>New U90C Tulloch Road Overbridge</b><br><br>In advance of main works build interception joint boxes at either end of anticipated temporary road diversion and install temporary 110mm HDPE duct along north side of existing U90C clear of proposed works.<br><br>Install new 110mm HDPE duct and associated joint boxes in north verge of new U90C.<br><br>Provide new 110mm HDPE duct within structure.<br><br>Divert cables into temporary and permanent ducts as required. | B       |                                                                                   | Design diversions                                                             | 8 weeks                          | 8 weeks                            | 28 weeks                |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         | Review diversion design.                                                          | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         | Agree measures to safeguard existing apparatus with Statutory Undertaker          | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         | Provide traffic management.                                                       | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         | Consult and comply with Statutory Undertaker's requirements                       | Install new ducts, poles and joint boxes.                                     |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         | Undertake any required protection works including installation of temporary ducts |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         | Install new ducts in structure                                                    | Inspect and supervise                                                         |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                                                                          |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Recover or demolish redundant ducts.                                     | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                                                                          | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                                                                          | Recover redundant cable and poles                                             |                                  |                                    |                         |
| BT18<br>(BT ref 19)<br>Drg<br>B1033200/CD/<br>2700/BT/032   | <p><b>Craibstone College</b></p> <p>In advance of main works install interception joint boxes on existing cable in college access road at chainage 316+720 clear of the proposed works and install 110mm HDPE (TBC) duct as insurance duct.</p> <p>Divert cables into temporary and permanent ducts as required.</p> <p><b>Goughburn Cottage</b></p> <p>Install 110mm HDPE duct and associated joint box and pole to connect to property.</p> <p>Divert cables into temporary and permanent ducts as required.</p> | B       |                                                                          | Design diversions                                                             | 8 weeks                          | 8 weeks                            | 28 weeks                |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Review diversion design.                                                 | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Provide traffic management.                                              | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Consult and comply with Statutory Undertaker's requirements              | Install new ducts, poles and joint boxes.                                     |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Undertake any required protection                                        |                                                                               |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                   | Location and Description                                                                                                                                                                                                                                                                                                        | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                       |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-----------------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                       |                                                                                                                                                                                                                                                                                                                                 |         |                                                                          |                                                                               |                                  |                                    |                                                                                               |
|                                                                               |                                                                                                                                                                                                                                                                                                                                 |         | works.                                                                   |                                                                               |                                  |                                    |                                                                                               |
|                                                                               |                                                                                                                                                                                                                                                                                                                                 |         | Install new ducts under mainline                                         | Inspect and supervise                                                         |                                  |                                    |                                                                                               |
|                                                                               |                                                                                                                                                                                                                                                                                                                                 |         | Recover or demolish redundant ducts.                                     | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                                                                                               |
|                                                                               |                                                                                                                                                                                                                                                                                                                                 |         |                                                                          | Testing and commissioning.                                                    |                                  |                                    |                                                                                               |
|                                                                               |                                                                                                                                                                                                                                                                                                                                 |         |                                                                          | Recover redundant cable and poles                                             |                                  |                                    |                                                                                               |
| BT19<br>(BT ref 20)<br>Drg<br>B1033200/CD/<br>2700/BT/033 and<br>070 and 071. | <b>A96 Craibstone Junction</b><br>Install new 6 x 110mm HDPE ducts and associated joint boxes in south verge of New Craibstone Roundabout with road crossings of existing A96 either side of roundabout.<br><br>Install 6 x 110mm HDPE ducts and associated joint boxes in north verge of A96 between Craibstone Roundabout and | B       |                                                                          | Design diversions                                                             | 8 weeks                          | 8 weeks                            | 28 weeks                                                                                      |
|                                                                               |                                                                                                                                                                                                                                                                                                                                 |         | Review diversion design.                                                 | Review diversion design.                                                      |                                  |                                    | BT Openreach advise BT19 works shall not be concurrent with any other BT openreach diversion. |
|                                                                               |                                                                                                                                                                                                                                                                                                                                 |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion.                                              |                                  |                                    |                                                                                               |
|                                                                               |                                                                                                                                                                                                                                                                                                                                 |         | Provide traffic management.                                              | Agree traffic management                                                      |                                  |                                    |                                                                                               |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                    | Group * | Main Works by Company                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                             |         |                                                             |                                                                               |                                  |                                    |                         |
|                                                             | interception point west of A96 Underbridge.<br>Provide new 110mm HDPE ducts (if required).<br>Install 110mm HDPE duct and associated joint boxes and pole between A96 and Walton Cottages.<br>Divert cables into temporary and permanent ducts as required. |         | Consult and comply with Statutory Undertaker's requirements | Install new ducts, poles and joint boxes.                                     |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                             |         | Undertake any required protection works.                    |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                             |         | Install new ducts in structure                              | Inspect and supervise                                                         |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                             |         | Recover or demolish redundant ducts.                        | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                             |         |                                                             | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                             |         |                                                             | Recover redundant cable and poles                                             |                                  |                                    |                         |
| BT20<br>(BT ref 23)<br>Drg<br>B1033200/CD/<br>2700/BT/034   | <b>U53C Chapel of Stoneywood to Newton to Kirkhill Road</b><br>In advance of main works install interception boxes on existing cable route clear of proposed works and install 110mm HDPE                                                                   | B       |                                                             | Design diversions                                                             | 8 weeks                          | 8 weeks                            | 6 weeks                 |
|                                                             |                                                                                                                                                                                                                                                             |         | Review diversion design.                                    | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                             |         | Agree measures to safeguard existing                        | Procure apparatus for                                                         |                                  |                                    |                         |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                  | Group * | Main Works by Company                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                           |         |                                                             |                                                                               |                                  |                                    |                         |
|                                                             | (TBC) duct and new pole.<br>Divert cables into temporary and permanent ducts as required. |         | apparatus with Statutory Undertaker                         | diversion.                                                                    |                                  |                                    |                         |
|                                                             |                                                                                           |         | Provide traffic management.                                 | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                           |         | Consult and comply with Statutory Undertaker's requirements | Install new ducts, poles and joint boxes.                                     |                                  |                                    |                         |
|                                                             |                                                                                           |         | Undertake any required protection works.                    |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                           |         | Install new ducts under mainline                            | Inspect and supervise                                                         |                                  |                                    |                         |
|                                                             |                                                                                           |         | Recover or demolish redundant ducts.                        | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |
|                                                             |                                                                                           |         |                                                             | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                           |         |                                                             | Recover redundant cable and poles                                             |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |                                                                          |                                                                               |                                  |                                    |                         |
| BT21<br>(BT ref 24)<br>Drg<br>B1033200/CD/<br>2700/BT/037   | <b>Kirkhill Overbridge</b><br><br>In advance of main works build interception joint boxes at either end of existing tracks crossing proposed mainline and lay out armoured cable with 110mm HDPE duct as required.<br><br>Install new 110mm HDPE duct and associated joint boxes in south verge of Kirkhill Access Track East and west verge of Bogenjoss Access Track West.<br><br>Provide new 110mm HDPE duct within structure.<br><br>Divert cables into temporary and permanent ducts as required. | B       |                                                                          | Design diversions                                                             | 8 weeks                          | 8 weeks                            | 6 weeks                 |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | Review diversion design.                                                 | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | Provide traffic management.                                              | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | Consult and comply with Statutory Undertaker's requirements              | Install new ducts, poles and joint boxes.                                     |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | Undertake any required protection works.                                 |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | Install new ducts in structure                                           | Inspect and supervise                                                         |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | Recover or demolish redundant ducts.                                     | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |



## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                 | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                          |         |                                                                          |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                          |         |                                                                          | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                          |         |                                                                          | Recover redundant cable and poles                                             |                                  |                                    |                         |
| BT22<br>(BT ref 25)<br>Drg<br>B1033200/CD/<br>2700/BT/040   | <b>Pitmedden Road</b><br>Install new 110mm HDPE duct between existing joint boxes in west verge of Pitmedden Road.<br><br>Divert cables into temporary and permanent ducts as required.<br><br>Protection of existing ducts in north verge of Dyce Drive | B       |                                                                          | Design diversions                                                             | 8 weeks                          | 8 weeks                            | 4 weeks                 |
|                                                             |                                                                                                                                                                                                                                                          |         | Review diversion design.                                                 | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                          |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                          |         | Provide traffic management.                                              | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                          |         | Consult and comply with Statutory Undertaker's requirements              | Install new ducts.                                                            |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                          |         | Undertake any required protection works                                  |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                          |         |                                                                          | Inspect and supervise                                                         |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                          | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |                                                                          |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                   |         | Recover or demolish redundant ducts.                                     | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |                                                                          | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |                                                                          | Recover redundant cable.                                                      |                                  |                                    |                         |
| BT23<br>(BT ref 26)<br>Drg<br>B1033200/CD/<br>2700/BT/042   | <b>B977 Goval</b><br><br>In advance of main works build interception joint boxes as required at both tie-ins of proposed works to existing carriageway and lay out armoured cable with 110mm HDPE duct as required clear of proposed works including temporary overground connection to Goval Farm.<br><br>Install new 2 x 110mm HDPE ducts and associated joint boxes in west verge of B977.<br><br>Provide new 110mm HDPE ducts | B       |                                                                          | Design diversions                                                             | 8 weeks                          | 8 weeks                            | 19 weeks                |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                   |         | Review diversion design.                                                 | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                   |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                   |         | Provide traffic management.                                              | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                   |         | Consult and comply with Statutory Undertaker's requirements              | Install new ducts and joint boxes.                                            |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                 | Location and Description                                                                                                                                                                                                                                                                                                    | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                       |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-----------------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                     |                                                                                                                                                                                                                                                                                                                             |         |                                                                          |                                                                               |                                  |                                    |                                                                                               |
|                                                                                             | <p>within structure.</p> <p>Install new 110mm HDPE duct and associated joint boxes in north verge of U198C Goval Cottage Road.</p> <p>Install new 110mm HDPE duct and associated joint boxes in south verge of Goval Villa Access Road.</p> <p>Divert cables into temporary and permanent ducts as required.</p>            |         | <p>Undertake any required protection works.</p>                          |                                                                               |                                  |                                    |                                                                                               |
|                                                                                             |                                                                                                                                                                                                                                                                                                                             |         | Install new ducts in structure                                           | Inspect and supervise                                                         |                                  |                                    |                                                                                               |
|                                                                                             |                                                                                                                                                                                                                                                                                                                             |         | Recover or demolish redundant ducts.                                     | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                                                                                               |
|                                                                                             |                                                                                                                                                                                                                                                                                                                             |         |                                                                          | Testing and commissioning.                                                    |                                  |                                    |                                                                                               |
|                                                                                             |                                                                                                                                                                                                                                                                                                                             |         |                                                                          | Recover redundant cables                                                      |                                  |                                    |                                                                                               |
| BT24<br>(BT ref 27 and BT ref 28)<br>Drg<br>B1033200/CD/<br>2700/BT/042 to<br>045 inclusive | <p><b>A947 Goval Junction</b></p> <p><b>New A947</b></p> <p>In advance of construction of new A947 near Old Toll House build interception joint boxes and install temporary 90mm PVC duct clear of proposed works between existing B977 at Beech Cottage and tie-in to existing A947.</p> <p>Install new 4 x 110mm HDPE</p> | B       |                                                                          | Design diversions                                                             | 8 weeks                          | 8 weeks                            | 28 weeks                                                                                      |
|                                                                                             |                                                                                                                                                                                                                                                                                                                             |         | Review diversion design.                                                 | Review diversion design.                                                      |                                  |                                    | BT Openreach advise BT24 works shall not be concurrent with any other BT openreach diversion. |
|                                                                                             |                                                                                                                                                                                                                                                                                                                             |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion.                                              |                                  |                                    |                                                                                               |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period                                            | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                       |                                                                               |                                                                             |                                    |                         |
|                                                             | <p>ducts and associated joint boxes in east verge of new A947 between south tie-in and junction with B977.</p> <p>Install new 2 x 110mm HDPE ducts and associated joint boxes in east verge of new A947 between junction with B977 and north tie-in.</p> <p>Install new 2 x 110mm HDPE duct in south verge of Goval (West) Roundabout to A947 Link Road (2).</p> <p>Provide new 110mm HDPE ducts within structure.</p> <p><b>B977 Echt to Balmedie Road</b></p> <p>In advance of construction of new B977 near Beech Cottage build interception joint boxes clear of new road and install temporary 90mm PVC duct clear of proposed works.</p> <p>In advance of construction of roundabout on new B977 near Meadowhead Cottage</p> |         |                       |                                                                               |                                                                             |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                       | Provide traffic management.                                                   | Agree traffic management                                                    |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                       | Consult and comply with Statutory Undertaker's requirements                   | Install new ducts and joint boxes.                                          |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                       | Undertake any required protection works.                                      | Undertake any required protection works.                                    |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                       | Install new ducts in structures                                               | Inspect and supervise                                                       |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                       | Recover or demolish redundant ducts.                                          | Install new cables. Undertake jointing, reinstatement and connection Works. |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                       |                                                                               | Testing and commissioning.                                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |                       |                                                                               |                                  |                                    |                         |
|                                                             | <p>Underbridge protect existing cables with concrete mat as required.</p> <p>Install new 110mm HDPE duct and associated joint boxes in south verge of new B977.</p> <p>Install new 110mm HDPE duct and associated joint boxes in east verge of Beech Cottage/Home Farm Access Track</p> <p>Install new 110mm HDPE duct and associated joint boxes between new and existing B977 at access to Kinnaird/Little Goval Cottages.</p> <p>Install new 110mm HDPE duct and associated joint boxes in east verge of Meadowhead/Waulkmill Road (North).</p> <p>Provide new 110mm HDPE duct within structure.</p> <p>Divert cables into temporary and permanent ducts as required.</p> |         |                       |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |                       | Recover redundant cables                                                      |                                  |                                    |                         |
| BT25                                                        | <b>B977 East Overbridge</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | B       |                       | Design diversions                                                             | 8 weeks                          | 8 weeks                            | 22 weeks                |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Group * | Main Works by Company                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |                                                                                   |                                                                               |                                  |                                    |                         |
| (BT ref 29)<br>Drg<br>B1033200/CD/<br>2700/BT/046           | In advance of construction of Newmachar Church Road Link Road at junction with C25C Newmachar Church Road build interception joint boxes and lay out armoured cable with 110mm HDPE duct as required clear of proposed works.<br><br>In advance of construction of new B977 Echt to Balmedie Road (5) build interception joint boxes and lay out armoured cable with 110mm HDPE duct as required between tie-in points clear of proposed works.<br><br>Install new 110mm HDPE duct and associated joint boxes in west verge of new B977 Echt to Balmedie Road (5) between south tie-in and junction with Newmachar Church Road Link Road.<br><br>Provide new 110mm HDPE duct within structure.<br><br>Install new 110mm HDPE duct and associated joint boxes in |         | Review diversion design.                                                          | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         | Agree measures to safeguard existing apparatus with Statutory Undertaker          | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         | Provide traffic management.                                                       | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         | Consult and comply with Statutory Undertaker's requirements                       | Install new ducts and joint boxes.                                            |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         | Undertake any required protection works including installation of temporary ducts | Undertake any required protection works.                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         | Install new ducts in structures                                                   | Inspect and supervise                                                         |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         | Recover or demolish redundant ducts.                                              | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                            | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                 | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                     |         |                       |                                                                                                                                                                                                               |                                  |                                    |                         |
|                                                             | north verge of Newmacher Church Road Link Road.<br><br>Install new 110mm HDPE duct and associated joint boxes in north verge of new B977 Echt to Balmedie Road (5) between junction with Newmacher Church Road Link Road and a point approx. 150m east opposite access road to Mossbelt, thence in south verge to east tie-in..<br><br>Divert cables into temporary and permanent ducts as required.                |         |                       | Testing and commissioning.<br><br>Recover redundant cables                                                                                                                                                    |                                  |                                    |                         |
| BT26<br>(BT ref 30)<br>Drg<br>B1033200/CD/<br>2700/BT/047   | <b>Lochgreens Overbridge</b><br><br>In advance of main works build interception joint box on access road to Lochgreens Farm and lay out armoured cable with 110mm HDPE duct as required clear of proposed works including temporary overground connection to existing pole clear of proposed new embankment works.<br><br>Install new 110mm HDPE duct and associated joint boxes in east verge of Lochgreens Access | B       |                       | Design diversions<br><br>Review diversion design.<br><br>Agree measures to safeguard existing apparatus with Statutory Undertaker<br><br>Provide traffic management.<br><br>Consult and comply with Statutory | 8 weeks                          | 8 weeks                            | 9 weeks                 |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                    | Group * | Main Works by Company                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                             |         |                                                                                   |                                                                               |                                  |                                    |                         |
|                                                             | Road (North) and (South).<br>Provide new 110mm HDPE duct within structure.<br>Install new 110mm HDPE duct in east verge of Lochgreens Cottage Access Road.<br>Divert cables into temporary and permanent ducts as required. |         | Undertaker's requirements                                                         | joint boxes.                                                                  |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                             |         | Undertake any required protection works including installation of temporary ducts | Undertake any required protection works.                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                             |         | Install new duct in structure                                                     | Inspect and supervise                                                         |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                             |         | Recover or demolish redundant ducts.                                              | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                             |         |                                                                                   | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                             |         |                                                                                   | Recover redundant cables and poles                                            |                                  |                                    |                         |
| BT27<br>(BT ref 31)<br>Drg<br>B1033200/CD/<br>2700/BT/049   | <b>U19C Leuchlands to Cranbog to Shielhill Road Overbridge.</b><br>In advance of main works lay out armoured cable between existing poles clear of the works.<br>Install new 110mm HDPE duct                                | B       |                                                                                   | Design diversions                                                             | 8 weeks                          | 8 weeks                            | 8 weeks                 |
|                                                             |                                                                                                                                                                                                                             |         | Review diversion design.                                                          | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                             |         | Agree measures to safeguard existing apparatus with                               | Procure apparatus for diversion.                                              |                                  |                                    |                         |



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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                    | Group * | Main Works by Company                                                                                                                                                                                                                                                            | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                          | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                             |         |                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                        |                                  |                                    |                         |
|                                                             | and associated joint boxes in east verge of U19C Leuchlands to Cranbog to Shielhill Road.<br>Provide new 110mm HDPE duct within structure.<br>Divert cables into temporary and permanent ducts as required. |         | Statutory Undertaker<br>Provide traffic management.<br>Consult and comply with Statutory Undertaker's requirements<br>Undertake any required protection works including installation of temporary ducts<br>Install new duct in structure<br>Recover or demolish redundant ducts. | Agree traffic management<br>Install new ducts and joint boxes.<br>Undertake any required protection works.<br>Inspect and supervise<br>Install new cables. Undertake jointing, reinstatement and connection Works.<br>Testing and commissioning.<br>Recover redundant cables and poles |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                               | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                        |         |                                                                          |                                                                               |                                  |                                    |                         |
| BT28<br>(BT ref 32)<br>Drg<br>B1033200/CD/<br>2700/BT/051   | <b>B999 Cranfield</b><br><br>Install new 110mm HDPE duct and associated joint boxes in east verge of B999.<br><br>Provide new 110mm HDPE duct within structure.<br><br>Install new 110mm HDPE duct and associated joint boxes in south verge of access to Cranfield and north verge of access to Cranfield Lodge.<br><br>Divert cables into temporary and permanent ducts as required. | B       |                                                                          | Design diversions                                                             | 6 weeks                          | 8 weeks                            | 9 weeks                 |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                        |         | Review diversion design.                                                 | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                        |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                        |         | Provide traffic management.                                              | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                        |         | Consult and comply with Statutory Undertaker's requirements              | Install new ducts and joint boxes.                                            |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                        |         | Undertake any required protection works.                                 | Undertake any required protection works.                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                        |         | Install new duct in structure                                            | Inspect and supervise                                                         |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br><br>Drawing Reference                   | Location and Description                                                                                                                                                                                                                                                                                                                        | Group * | Main Works by Company                | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                                       |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                           |                                                                                                                                                                                                                                                                                                                                                 |         |                                      |                                                                               |                                  |                                    |                                                                                                               |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                 |         | Recover or demolish redundant ducts. | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                                                                                                               |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                 |         |                                      | Testing and commissioning.                                                    |                                  |                                    |                                                                                                               |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                 |         |                                      | Recover redundant cables and poles                                            |                                  |                                    |                                                                                                               |
| BT29<br>(BT ref 34)<br><br>Drg<br>B1033200/CD/<br>2700/BT/052 to<br>055 inclusive | <b>A90 Blackdog Junction</b><br><br>In advance of main works lower existing duct to Middleton Steadings across AWPR Northern Leg carriageway at approx. chainage 330+600 to 600mm below FRL and install 110mm HDPE duct as insurance duct. Lay out armoured cable or temporary overhead cable to Middlefield.<br><br>Install new 2 x 110mm HDPE | B       |                                      | Design diversions                                                             | 8 weeks                          | 8 weeks                            | 16 weeks<br><br>BT Openreach advise BT29 works shall not be concurrent with any other BT openreach diversion. |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                                 |         | Review diversion design.             | Review diversion design.                                                      |                                  |                                    |                                                                                                               |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Group * | Main Works by Company                                                                                                                                                                                                                                                                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                     | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                   |                                  |                                    |                         |
|                                                             | <p>ducts and associated joint boxes in east verge of Blackdog Junction Southbound Merge Slip Road from existing chamber at existing junction to Blackdog Industrial Estate to top of slip road.</p> <p>Install new 110mm HDPE duct and associated joint boxes in south verge of roundabout.</p> <p>Provide new 110mm HDPE duct within structure (Blackdog Junction Underbridge South).</p> <p>Install new 110mm HDPE duct and associated joint boxes in west verge of C1C Belhalvie to Wateridgemuir Road.</p> <p>Install new 110mm HDPE duct and associated joint boxes in east verge of Middleton Steadings Access Track.</p> <p>Install new 110mm HDPE duct in south verge of Middlefield Access Road.</p> <p>In advance of main works install 2 x 110mm HDPE ducts from</p> |         | <p>Agree measures to safeguard existing apparatus with Statutory Undertaker</p> <p>Provide traffic management.</p> <p>Consult and comply with Statutory Undertaker's requirements</p> <p>Undertake any required protection works.</p> <p>Install new ducts in structures</p> <p>Recover or demolish redundant ducts.</p> | <p>Procure apparatus for diversion.</p> <p>Agree traffic management</p> <p>Install new ducts and joint boxes.</p> <p>Undertake any required protection works.</p> <p>Inspect and supervise</p> <p>Install new cables. Undertake jointing, reinstatement and connection Works.</p> |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                     | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                              |         |                       |                                                                               |                                  |                                    |                         |
|                                                             | existing joint box at entrance to Blackdog Industrial Estate to new joint box on Blackdog Industrial Estate Access Road.<br><br>Install new 2 x 110mm HDPE ducts and associated joint boxes in east verge of Blackdog Industrial Estate Access Road.<br><br>Install new 2 x 110mm HDPE ducts in south verge of Blackdog Access Road to new joint box at top of Blackdog Junction Southbound Merge Slip Road. |         |                       |                                                                               |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
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| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                       |                                                                               |                                  |                                    |                         |
|                                                             | <p>In advance of main works lay out armoured cable from existing joint box on A90 junction with Wester Hatton Cottages to pole clear of proposed works laid in 110mm HDPE duct as required.</p> <p>Install new 110mm HDPE duct and associated joint box in south verge of access track to Blackdog Rifle Range.</p> <p>Install new 3 x 110mm HDPE ducts and associated joint boxes in east verge of Blackdog Junction.</p> <p>Southbound diverge Slip Road from existing joint box at access to Wester Hatton Cottages.</p> <p>Install new 3 x 110mm HDPE ducts and associated joint boxes in north verge of roundabout.</p> <p>Provide new 110mm HDPE ducts within structure (Blackdog Junction Underbridge North).</p> <p>Install new 3 x 110mm HDPE ducts and associated joint boxes</p> |         |                       | Testing and commissioning.                                                    |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Group * | Main Works by Company    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
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| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |                          |                                                                               |                                  |                                    |                         |
|                                                             | <p>in east verge C1C Belhalvie to Waterridgemuir Road as far as proposed crossing at junction with Wester Hatton to C1C Access Road and thence in west verge to tie-in to existing joint box.</p> <p>Install new 110mm HDPE duct and associated joint boxes in south verge of Wester Hatton to C1C Access Road and west verge of Wester Hatton Access Road.</p> <p>Protect existing ducts or install new 2 x 110mm HDPE ducts as insurance ducts (if required) in east verge of existing A90 between existing A90 junction at Burnhead Road and a point approx. 400m north of existing road to Blackdog Rifle Range.</p> <p>Divert cables into temporary and permanent ducts as required.</p> |         |                          | Recover redundant cables and poles                                            |                                  |                                    |                         |
| BT30<br>(BT ref 33)<br>Drg                                  | <b>Tarbethill</b><br>In advance of main works install interception joint boxes on existing cable and lay out                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | B       |                          | Design diversions                                                             | 6 weeks                          | 8 weeks                            | 8 weeks                 |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         | Review diversion design. | Review diversion design.                                                      |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
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| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |                                                                          |                                                                               |                                  |                                    |                         |
| B1033200/CD/2700/BT/053                                     | armoured cable clear of proposed works at Tarbethill Landfill Access Track tie-in.<br><br>Install new 110mm HDPE duct and associated joint boxes in east verge of Tarbethill Landfill Access Track.<br><br>Install new 110mm HDPE duct as insurance duct in north verge of U240C Newmill to Burnhead Road at junction with Tarbethill Landfill Access Track.<br><br>If required install new 110mm HDPE duct as insurance duct in verge of existing road to Harehill at junctions with Seaview Access Track and New Tarbethill Access Road.<br><br>Divert cables into temporary and permanent ducts as required. |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         | Provide traffic management.                                              | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         | Consult and comply with Statutory Undertaker's requirements              | Install new ducts and joint boxes.                                            |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         | Undertake any required protection works.                                 | Undertake any required protection works.                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |                                                                          | Inspect and supervise                                                         |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         | Recover or demolish redundant ducts.                                     | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |                                                                          | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |                                                                          | Recover redundant cables and poles                                            |                                  |                                    |                         |



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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference           | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Group * | Main Works by Company                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
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| <b>British Telecom – Openreach (BT)</b>                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                                                                                   |                                                                               |                                  |                                    |                         |
| BT31<br>(BT ref 116)<br>Drg<br>B1033200/CD/<br>2700/BT/015 and<br>058 | <p><b>Blaikiewell Farmhouse</b></p> <p>In advance of main works install HDPE ducts across area of proposed fill at approx. AWPR Fastlink chainage 11+250 and AWPR Southern leg chainage 200+100</p> <p><b>Burnhead, C5K Lochton to Auchlunies Road.</b></p> <p>In advance of main works lay out armoured cable to west of existing carriageway at south end of proposed works laid in 110mm HDPE duct as required.</p> <p>Also in advance of main works lay out armoured cable between Burhead and Blair-Crynoch. (Temporary diversion will require completion of new verge in U63K Maryculter Road).</p> <p>Install 110mm HDPE duct in north verge of U63K Maryculter Road.</p> <p>Install 110mm HDPE duct and associated joint boxes in east</p> | B       |                                                                                   | Design diversions.                                                            | 10 weeks                         | 8 weeks                            | 13 weeks                |
|                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Review diversion design.                                                          | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Agree measures to safeguard existing apparatus with Statutory Undertaker          | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Provide traffic management.                                                       | Agree traffic management                                                      |                                  |                                    |                         |
|                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Consult and comply with Statutory Undertaker's requirements                       | Install new ducts, poles and joint boxes.                                     |                                  |                                    |                         |
|                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Undertake any required protection works including installation of temporary ducts |                                                                               |                                  |                                    |                         |
|                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Install new ducts in structures and under mainline                                | Inspect and supervise                                                         |                                  |                                    |                         |
|                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Recover or demolish redundant ducts.                                              | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference           | Location and Description                                                                                                                                                                                                                                                                                                                                                                                      | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                            | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                               |                                                                                                                                                                                                                                                                                                                                                                                                               |         |                       |                                                                                                                                                                                                                          |                                  |                                    |                         |
|                                                                       | verge of C5K Lochton to Auchlunies Road.<br>Provide new 110mm HDPE duct within structure.<br>Divert cables into temporary and permanent ducts as required.                                                                                                                                                                                                                                                    |         |                       | Testing and commissioning.<br>Recover redundant cable and poles.                                                                                                                                                         |                                  |                                    |                         |
| BT32<br>(BT ref 117)<br>Drg<br>B1033200/CD/<br>2700/BT/059 and<br>060 | <b>Newlands, C30K Hillside to Batchart Road.</b><br>In advance of main works at C30K, Merchants Croft Access Track and Sunnyside Farmhouse Access Track install joint boxes to intercept existing cables, lay out armoured cable laid in 110mm HDPE duct as required.<br>Install 110mm HDPE duct and associated joint boxes in west verge of realigned C30K.<br>Provide new 110mm HDPE duct within structure. | B       |                       | Design diversions.<br>Review diversion design.<br>Agree measures to safeguard existing apparatus with Statutory Undertaker<br>Provide traffic management.<br>Consult and comply with Statutory Undertaker's requirements | 10 weeks                         | 8 weeks                            | 9 weeks                 |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                  | Group * | Main Works by Company                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                           |         |                                                                                   |                                                                               |                                  |                                    |                         |
|                                                             | Install 110mm HDPE duct in south verge of Merchants Croft Access Track.<br>Install 110mm HDPE duct in south verge of Sunnyside Farmhouse Access Road.<br>Divert cables into temporary and permanent ducts as required.    |         | Undertake any required protection works including installation of temporary ducts |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                           |         | Install new ducts in structures                                                   | Inspect and supervise                                                         |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                           |         | Recover or demolish redundant ducts.                                              | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                           |         |                                                                                   | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                           |         |                                                                                   | Recover redundant cable and poles.                                            |                                  |                                    |                         |
| BT33<br>(BT ref 118)<br>Drg<br>B1033200/CD/<br>2700/BT/061  | <b>U59K Bishopston</b><br>In advance of main works erect new poles at limits of proposed works to intercept existing overhead cable. Lay out armoured cable to west of existing U59K laid in 110mm HDPE duct as required. | B       |                                                                                   | Design diversions.                                                            | 8 weeks                          | 8 weeks                            | 5 weeks                 |
|                                                             |                                                                                                                                                                                                                           |         | Review diversion design.                                                          | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                           |         | Agree measures to safeguard existing apparatus with Statutory Undertaker          | Procure apparatus for diversion.                                              |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                            | Group * | Main Works by Company                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                     |         |                                                                                   |                                                                               |                                  |                                    |                         |
|                                                             | Install new 110mm HDPE duct and associated joint boxes in east verge of Bishopton Access Road.<br><br>Divert cables into temporary and permanent ducts as required. |         | Provide traffic management.                                                       | Agree traffic management                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                     |         | Consult and comply with Statutory Undertaker's requirements                       | Install new ducts, poles and joint boxes.                                     |                                  |                                    |                         |
|                                                             |                                                                                                                                                                     |         | Undertake any required protection works including installation of temporary ducts |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                     |         | Install new ducts in structures                                                   | Inspect and supervise                                                         |                                  |                                    |                         |
|                                                             |                                                                                                                                                                     |         | Recover or demolish redundant ducts.                                              | Install new cables. Undertake jointing, reinstatement and connection Works.   |                                  |                                    |                         |
|                                                             |                                                                                                                                                                     |         |                                                                                   | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                     |         |                                                                                   | Recover redundant cable and poles                                             |                                  |                                    |                         |
| BT34                                                        | <b>Whistlebrae and Bothiebrigg,</b>                                                                                                                                 | B       |                                                                                   | Design diversions.                                                            | 10 weeks                         | 8 weeks                            | 7 weeks                 |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference   | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Group * | Main Works by Company                                                                                                                                                                                                                                                                                                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                                              | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
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| <b>British Telecom – Openreach (BT)</b>                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                            |                                  |                                    |                         |
| (BT ref 119)<br>Drg<br>B1033200/CD/<br>2700/BT/065 and<br>068 | <p><b>C5K Schoolhill to Lochton Road.</b></p> <p>In advance of main works at proposed new junction with U58K Hareness to Checkbar Road install interception joint boxes at limits of proposed works and lower/protect existing cable as required.</p> <p>In advance of main works at Bothy Brig Access Track and Bothy Brig Cottage Access Track 1 install interception poles at limits of proposed works and lay out armoured cable laid in 110mm HDPE duct as required.</p> <p>Install new 110mm HDPE duct and associated joint boxes in east verge of C5K between U58K and Bothy Brig Cottage.</p> <p>Install new 110mm HDPE duct and associated joint boxes in west verge of C5K between Bothy Brig Cottage and PS31 C5K Schoolhill to Lochton to nigg Road Overbridge.</p> |         | <p>Review diversion design.</p> <p>Agree measures to safeguard existing apparatus with Statutory Undertaker</p> <p>Provide traffic management.</p> <p>Consult and comply with Statutory Undertaker's requirements</p> <p>Undertake any required protection works.</p> <p>Install new ducts in structures</p> <p>Recover or demolish redundant ducts.</p> | <p>Review diversion design.</p> <p>Procure apparatus for diversion.</p> <p>Agree traffic management</p> <p>Install new ducts, poles and joint boxes.</p> <p>Inspect and supervise</p> <p>Install new cables. Undertake jointing, reinstatement and connection Works.</p> <p>Testing and commissioning.</p> |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference         | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                          | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
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| <b>British Telecom – Openreach (BT)</b>                             |                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |                                                                          |                                                                               |                                  |                                    |                         |
|                                                                     | Provide new 110mm HDPE duct within structure.<br>Install new 110mm HDPE duct along inside of fenceline between PS31 Overbridge and Whistlebrae Cottage.<br>Divert cables into temporary and permanent ducts as required.                                                                                                                                                                                                          |         |                                                                          | Recover redundant cable and poles                                             |                                  |                                    |                         |
| BT35<br>(BT ref 120)<br>Drg<br>B1033200/CD/<br>2700/BT/66 and<br>69 | <b>A956 Charleston Junction.</b><br>In advance of main works lay out armoured cable to east of slip road from southbound A90 to A956 clear of proposed works.<br>Install new 110mm HDPE duct and associated joint boxes in east verge of slip road from southbound A90 to A956, north verge of A956 Wellington Road and west verge of U168K Old Stonehaven Road.<br>Divert cables into temporary and permanent ducts as required. | B       |                                                                          | Design diversions                                                             | 8 weeks                          | 8 weeks                            | 10 weeks                |
|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                   |         | Review diversion design.                                                 | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                   |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                   |         | Provide traffic management.                                              | Agree traffic management                                                      |                                  |                                    |                         |
|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                   |         | Consult and comply with Statutory Undertaker's requirements              | Install new ducts, poles and joint boxes.                                     |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                    | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                   | Group * | Main Works by Company                                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                                  | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                            |         |                                                                                          |                                                                                                                |                                  |                                    |                         |
|                                                                                                | <p><b>U168K Old Stonehaven Road</b><br/>Expose existing duct, lower or install 110mm HDPE insurance duct and associated joint boxes and crossings as required.</p> <p><b>C5K Lochton Auchlunies Nigg Road</b><br/>Expose existing duct, lower or install 110mm HDPE insurance duct as required.<br/>C5K existing crossing of A90<br/>Expose existing duct and protect as required where road width is to be increased.</p> |         | <p>Undertake any required protection works including installation of temporary ducts</p> | <p>Undertake required protection works on C5K</p>                                                              |                                  |                                    |                         |
|                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                            |         |                                                                                          | Inspect and supervise                                                                                          |                                  |                                    |                         |
|                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                            |         | Recover or demolish redundant ducts.                                                     | Install new cables. Undertake jointing, reinstatement and connection Works.                                    |                                  |                                    |                         |
|                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                            |         |                                                                                          | Testing and commissioning.                                                                                     |                                  |                                    |                         |
|                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                            |         |                                                                                          | Recover redundant cable and poles                                                                              |                                  |                                    |                         |
| BT36<br>(BT Ref S1-01(A))<br><br>(Refer also to P246600/02/1/16203(S1) Rev A, 16204(S1) Rev A) | <p><b>Existing A90 verge from Ch. - 2275 to existing Easter Hatton Junction</b></p> <p>As required over approx. 300m slew and lower ducts in the verge of the existing A90 carriageway and Easter Hatton Link Road.</p>                                                                                                                                                                                                    | B       | <p>Accurately mark on site any proposed changes to line and level of verges.</p>         | <p>Review any proposed changes to line and level of verge: Assess extent of slewing and lowering required.</p> | 8 weeks                          | 16 weeks                           | 4 weeks                 |
|                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                            |         | Agree measures to safeguard existing apparatus with Statutory Undertaker.                | Procure apparatus for diversion.                                                                               |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                     | Location and Description                                                                                                                                                                                                                   | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected      | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                                                                              |
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| <b>British Telecom – Openreach (BT)</b>                                                                         |                                                                                                                                                                                                                                            |         |                                                                           |                                                                                    |                                  |                                    |                                                                                                                                                      |
| P246600/2700/B<br>T/001                                                                                         |                                                                                                                                                                                                                                            |         | Provide traffic management.                                               | Agree traffic management                                                           |                                  |                                    |                                                                                                                                                      |
|                                                                                                                 |                                                                                                                                                                                                                                            |         | Consult and comply with Statutory Undertaker's requirements.              | As required slew and lower ducts. Joint boxes to be adjusted/rebuilt as necessary. |                                  |                                    |                                                                                                                                                      |
|                                                                                                                 |                                                                                                                                                                                                                                            |         | Undertake any required protection works.                                  | Inspect and supervise                                                              |                                  |                                    |                                                                                                                                                      |
|                                                                                                                 |                                                                                                                                                                                                                                            |         |                                                                           | Testing and commissioning.                                                         |                                  |                                    |                                                                                                                                                      |
| BT37<br>(BT Ref S1-02(A))<br><br>(Refer also to P246600/02/1/16205(S1) Rev A, 16206(S1) Rev A, 16214(S1) Rev A) | <b>Balmedie Junction (verge of SB Merge) to Eigie Road (Temporary Works)</b><br><br>Provide approx. 815m of 4 No. temporary 100mm PVC ducts, and associated joint boxes. Ducts to run along site fence lines. Bury duct at road crossings. | B       |                                                                           | Design diversions                                                                  | 8 weeks                          | 16 weeks                           | 10 weeks<br><br>(for installation and testing but NOT including fibre optic cable change over:- typically this is 30 days but can be up to 90 days). |
|                                                                                                                 |                                                                                                                                                                                                                                            |         | Review diversion design.                                                  | Review diversion design.                                                           |                                  |                                    |                                                                                                                                                      |
|                                                                                                                 |                                                                                                                                                                                                                                            |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                   |                                  |                                    |                                                                                                                                                      |
|                                                                                                                 |                                                                                                                                                                                                                                            |         | Provide traffic management.                                               | Agree traffic management                                                           |                                  |                                    |                                                                                                                                                      |



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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                    | Location and Description                                                                                                                                                       | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                                   |
|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                        |                                                                                                                                                                                |         |                                                                           |                                                                                                                                              |                                  |                                    |                                                                                                           |
| P246600/2700/B<br>T/002 & 003                                                                  | Provide optic fibre sub-duct and cable between the existing joints.<br><br>Divert cables into temporary ducts as required.                                                     |         | Consult and comply with Statutory Undertaker's requirements.              | Install new ducts, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                                                                                                           |
|                                                                                                |                                                                                                                                                                                |         | Undertake any required protection works.                                  | Undertake any required protection works.                                                                                                     |                                  |                                    |                                                                                                           |
|                                                                                                |                                                                                                                                                                                |         |                                                                           | Testing and commissioning.                                                                                                                   |                                  |                                    |                                                                                                           |
|                                                                                                |                                                                                                                                                                                |         |                                                                           | Recover copper cables. Recover optic fibre cables.                                                                                           |                                  |                                    |                                                                                                           |
|                                                                                                |                                                                                                                                                                                |         |                                                                           | Demolish out-of-use joint boxes which are still accessible.                                                                                  |                                  |                                    |                                                                                                           |
| BT38<br>(BT Ref S1-02(R))<br><br>(Refer also to P246600/02/1/16205(S1) Rev A, 16206(S1) Rev A, | <b>Balmedie Junction (SB Merge) to Balmedie East Roundabout</b><br><br>Provide approx. 700m of 4 No. 100mm PVC ducts, and associated joint boxes, in proposed southbound merge | B       |                                                                           | Design diversions                                                                                                                            | 8 weeks                          | 16 weeks                           | 12 weeks<br><br>(for installation and testing but NOT including fibre optic cable change over:- typically |
|                                                                                                |                                                                                                                                                                                |         | Review diversion design.                                                  | Review diversion design.                                                                                                                     |                                  |                                    |                                                                                                           |
|                                                                                                |                                                                                                                                                                                |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                             |                                  |                                    |                                                                                                           |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                   | Group * | Main Works by Company                                                                                                                                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                                                                                                                                                           | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                    |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|--------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                            |         |                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                  |                                    |                                            |
| 16214(S1) Rev A)<br><br>P246600/2700/B T/002 & 003          | verge of the new A90, the east verge of the SB slip road and roundabout.<br><br>Provide optic fibre sub-duct and cable between the existing joints.<br><br>Divert cables into permanent ducts as required. |         | Provide traffic management.<br><br>Consult and comply with Statutory Undertaker's requirements.<br><br>Undertake any required protection works.<br><br>Recover temporary overground ducts | Agree traffic management<br><br>Install new ducts, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary.<br><br>Undertake any required protection works.<br><br>Inspect and supervise<br><br>Testing and commissioning.<br><br>Recover copper cables. Recover optic fibre cables.<br><br>Demolish temporary joint boxes which are still accessible. |                                  |                                    | this is 30 days but can be up to 90 days). |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                               | Location and Description                                                                                               | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected      | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                   |                                                                                                                        |         |                                                                           |                                                                                    |                                  |                                    |                         |
| BT39<br>(BT Ref S1-03(A))<br><br>(Refer also to P246600/02/1/16206(S1) Rev A)<br><br>P246600/2700/B T/002 | <b>Millden Access (at Millden Farm House)</b><br><br>As required lower existing duct for proposed Millden Access Road. | B       | Accurately mark on site proposed verge and carriageway levels.            | Review proposed levels: Assess extent of slewing and lowering required.            | 8 weeks                          | 16 weeks                           | 2 weeks                 |
|                                                                                                           |                                                                                                                        |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                   |                                  |                                    |                         |
|                                                                                                           |                                                                                                                        |         | Provide traffic management.                                               | Agree traffic management                                                           |                                  |                                    |                         |
|                                                                                                           |                                                                                                                        |         | Consult and comply with Statutory Undertaker's requirements               | As required slew and lower ducts. Joint boxes to be adjusted/rebuilt as necessary. |                                  |                                    |                         |
|                                                                                                           |                                                                                                                        |         | Undertake any required protection works.                                  | Inspect and supervise                                                              |                                  |                                    |                         |
|                                                                                                           |                                                                                                                        |         |                                                                           | Testing and commissioning.                                                         |                                  |                                    |                         |
| BT40<br>(BT Ref S1-03(R))                                                                                 | <b>Millden Access Road</b><br><br>Provide approx. 500m, of 1 No.                                                       | B       |                                                                           | Design diversions                                                                  | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                           |                                                                                                                        |         | Review diversion design.                                                  | Review diversion design.                                                           |                                  |                                    |                         |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                     | Location and Description                                                                                          | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                               | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                         |                                                                                                                   |         |                                                                           |                                                                                                                                             |                                  |                                    |                         |
| (Refer also to P246600/02/1/16206(S1) Rev A, 16208(S1) Rev A)<br><br>P246600/2700/B T/002 & 003 | 100mm PVC duct, and associated joint boxes, in verge of proposed Millden Access Road to Balmedie West Roundabout. |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                            |                                  |                                    |                         |
|                                                                                                 | Divert cables to permanent ducts as required.                                                                     |         | Provide traffic management.                                               | Agree traffic management.                                                                                                                   |                                  |                                    |                         |
|                                                                                                 |                                                                                                                   |         | Consult and comply with Statutory Undertaker's requirements.              | Install new duct, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                                 |                                                                                                                   |         | Undertake any required protection works.                                  | Undertake any required protection works.                                                                                                    |                                  |                                    |                         |
|                                                                                                 |                                                                                                                   |         | Recover temporary overground ducts.                                       | Inspect and supervise.                                                                                                                      |                                  |                                    |                         |
|                                                                                                 |                                                                                                                   |         |                                                                           | Testing and commissioning.                                                                                                                  |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                               | Location and Description                                                                                                                                                                                                                                                                                                                                                                                    | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected                            | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |                                  |
|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------|----------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|----------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                             |         |                       |                                                                                                          |                                  |                                    |                         |                                  |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                             |         |                       | Demolish temporary joint boxes which are still accessible.<br>Recover copper cables from original ducts. |                                  |                                    |                         |                                  |
| BT41<br>(BT Ref S1-04(A))<br><br>(Refer also to P246600/02/1/16207(S1) Rev B)<br><br>P246600/2700/B T/002 | <b>Existing A90 crossing near Southfolds (Temporary Diversion)</b><br><br>Provide approx. 70m of 1 No. Openreach HDPE duct crossing existing A90 (at approx. Ch. - 1150) and proposed slip roads extend duct into joint boxes. Duct to be laid a minimum of 300mm below proposed excavations. Duct to be bedded in and surrounded by a minimum of 75mm of sand. Take duct up to 600mm below surface at each | B       |                       | Design diversions.                                                                                       | 8 weeks                          | 16 weeks                           | 8 weeks                 |                                  |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                             |         |                       | Review diversion design.                                                                                 |                                  |                                    |                         | Review diversion design.         |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                             |         |                       | Agree measures to safeguard existing apparatus with Statutory Undertaker.                                |                                  |                                    |                         | Procure apparatus for diversion. |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                             |         |                       | Provide traffic management.                                                                              |                                  |                                    |                         | Agree traffic management.        |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                             |         |                       | Consult and comply with Statutory Undertaker's requirements.                                             |                                  |                                    |                         | Supply HDPE duct to Company.     |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                              | Group * | Main Works by Company                                                                         | Works by Statutory Undertakers', Private Apparatus owners and others affected                        | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-----------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                       |         |                                                                                               |                                                                                                      |                                  |                                    |                         |
|                                                             | end.<br><br>Draw-in copper cables, from original ducts, as necessary. |         | Install new duct The section crossing the A90 shall be installed using trenchless techniques. | Inspect and supervise installation of new duct. Draw in copper cables.                               |                                  |                                    |                         |
|                                                             |                                                                       |         | Undertake any required protection works.                                                      | Undertake jointing, reinstatement and connection works. Transfer cables, as necessary.               |                                  |                                    |                         |
|                                                             |                                                                       |         |                                                                                               | Testing and commissioning.                                                                           |                                  |                                    |                         |
|                                                             |                                                                       |         |                                                                                               | Demolish original joint boxes which are still accessible. Recover copper cables from original ducts. |                                  |                                    |                         |
| BT42<br>(BT Ref S1-05(A))                                   | <b>Southfolds (Temporary Diversion)</b>                               | B       |                                                                                               | Design diversions                                                                                    | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                             |                                                                       |         | Review diversion design.                                                                      | Review diversion design.                                                                             |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                               | Location and Description                                                                                                                                                                                                                                              | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                  | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                   |                                                                                                                                                                                                                                                                       |         |                                                                          |                                                                                                                                |                                  |                                    |                         |
| (Refer also to P246600/02/1/16207(S1) Rev B, 16208(S1) Rev A)<br><br>P246600/2700/B T/002 | Provide approx. 78m of 1 No. 100mm temporary duct overground along site fence line. Bury duct at vehicle access.<br><br>Provide new joint box (permanent) to west of Southfolds Access turning head.<br><br>Draw-in copper cables, from original ducts, as necessary. |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion.                                                                                               |                                  |                                    |                         |
|                                                                                           |                                                                                                                                                                                                                                                                       |         | Provide traffic management.                                              | Agree traffic management                                                                                                       |                                  |                                    |                         |
|                                                                                           |                                                                                                                                                                                                                                                                       |         | Consult and comply with Statutory Undertaker's requirements.             | Install new duct, joint box and cables. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                           |                                                                                                                                                                                                                                                                       |         | Undertake any required protection works.                                 | Undertake any required protection works.                                                                                       |                                  |                                    |                         |
|                                                                                           |                                                                                                                                                                                                                                                                       |         |                                                                          | Testing and commissioning.                                                                                                     |                                  |                                    |                         |
|                                                                                           |                                                                                                                                                                                                                                                                       |         |                                                                          | Demolish original joint boxes which are still accessible. Recover copper cables from original ducts.                           |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                                | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |                                                                           |                                                                               |                                  |                                    |                         |
| BT43<br>(BT Ref S1-06(A))<br><br>(Refer also to P246600/02/1/16207(S1) Rev B, 16208(S1) Rev A)<br><br>P246600/2700/B T/002 | <b>Southfolds to “Cell Mast” Track (including Millden Access crossing) (Temporary Diversion)</b><br><br>Provide approx. 150m of 1 No. 100mm temporary duct overground along site fence line. Bury duct at vehicle access.<br><br>Where duct crosses Millden Access provide approx. 40m of 1 No. 100mm HDPE duct. Duct to be laid a minimum of 300mm below proposed excavations. Duct to be bedded in and surrounded by a minimum of 75mm of sand. Take duct up to 600mm below surface at each | B       |                                                                           | Design diversions                                                             | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         | Review diversion design.                                                  | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         | Provide traffic management.                                               | Agree traffic management                                                      |                                  |                                    |                         |
|                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         | Consult and comply with Statutory Undertaker's requirements.              | Supply HDPE duct to Company.                                                  |                                  |                                    |                         |
| At Millden Access crossing only:- Install HDPE duct.                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |                                                                           |                                                                               |                                  |                                    |                         |



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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                          | Group * | Main Works by Company                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                          | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------|---------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                   |         |                                          |                                                                                                                                                        |                                  |                                    |                         |
|                                                             | end.<br>Draw-in copper cables, from original ducts, as necessary. |         |                                          | Install new duct (out with Millden Access crossing) and cables. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                             |                                                                   |         | Undertake any required protection works. | Undertake any required protection works.                                                                                                               |                                  |                                    |                         |
|                                                             |                                                                   |         |                                          | Testing and commissioning.                                                                                                                             |                                  |                                    |                         |
|                                                             |                                                                   |         |                                          | Demolish original joint boxes which are still accessible. Recover copper cables from original ducts.                                                   |                                  |                                    |                         |
| BT44<br>(BT Ref S1-07(R))                                   | <b>Accommodation Works “Cell Mast” Track off Millden Access</b>   | B       |                                          | Design diversions                                                                                                                                      | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                             |                                                                   |         | Review diversion design.                 | Review diversion design.                                                                                                                               |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                    | Location and Description                                                                                                                      | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                        |                                                                                                                                               |         |                                                                           |                                                                                                                     |                                  |                                    |                         |
| (Refer also to P246600/02/1/16208(S1) Rev A)<br><br>P246600/2700/B T/002 & 003 | Provide approx. 105m of 1 No. 100mm PVC duct and associated joint boxes, in proposed track verge.<br><br>Draw-in copper cables, as necessary. |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                    |                                  |                                    |                         |
|                                                                                |                                                                                                                                               |         | Provide traffic management.                                               | Agree traffic management                                                                                            |                                  |                                    |                         |
|                                                                                |                                                                                                                                               |         | Consult and comply with Statutory Undertaker's requirements.              | Install new duct and cables. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                |                                                                                                                                               |         | Recover temporary overground ducts.                                       | Inspect and supervise                                                                                               |                                  |                                    |                         |
|                                                                                |                                                                                                                                               |         | Undertake any required protection works.                                  | Undertake any required protection works.                                                                            |                                  |                                    |                         |
|                                                                                |                                                                                                                                               |         |                                                                           | Testing and commissioning.                                                                                          |                                  |                                    |                         |
|                                                                                |                                                                                                                                               |         |                                                                           | Demolish temporary joint boxes which are still accessible. Recover copper cables from original ducts.               |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                                  | Location and Description                                                                                                                                                                  | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                                      |                                                                                                                                                                                           |         |                                                                           |                                                                                                                     |                                  |                                    |                         |
| BT45<br>(BT Ref S1-08(R))<br>(Refer also to P246600/02/1/16207(S1) Rev B, 16208(S1) Rev A)<br><br>P246600/2700/B T/002 & 003 | <b>Southfolds Access (to turning head)</b><br><br>Provide approx. 115m of 1 No. 100mm PVC duct and associated joint boxes, in proposed verge.<br><br>Draw-in copper cables, as necessary. | B       |                                                                           | Design diversions                                                                                                   | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                                              |                                                                                                                                                                                           |         | Review diversion design.                                                  | Review diversion design.                                                                                            |                                  |                                    |                         |
|                                                                                                                              |                                                                                                                                                                                           |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                    |                                  |                                    |                         |
|                                                                                                                              |                                                                                                                                                                                           |         | Provide traffic management.                                               | Agree traffic management                                                                                            |                                  |                                    |                         |
|                                                                                                                              |                                                                                                                                                                                           |         | Consult and comply with Statutory Undertaker's requirements.              | Install new duct and cables. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                                                              |                                                                                                                                                                                           |         | Recover temporary overground ducts.                                       | Inspect and supervise                                                                                               |                                  |                                    |                         |
|                                                                                                                              | Testing and commissioning.                                                                                                                                                                |         |                                                                           |                                                                                                                     |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                             | Location and Description                                                                                                                                                                                                                                                                 | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected                            | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------|----------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                                 |                                                                                                                                                                                                                                                                                          |         |                       |                                                                                                          |                                  |                                    |                         |                                                                                                                           |
|                                                                                                                         |                                                                                                                                                                                                                                                                                          |         |                       | Demolish temporary joint boxes which are still accessible.<br>Recover copper cables from original ducts. |                                  |                                    |                         |                                                                                                                           |
| BT46<br>(BT Ref S1-09(R))<br>(Refer also to P246600/02/1/16207(S1) Rev B, 16208(S1) Rev A )<br><br>P246600/2700/B T/003 | <b>Southfolds Access (East)</b><br><br>Provide approx. 48m of 1 No. 100mm PVC duct and new pole in verge (adjacent to existing pole).<br><br>Draw-in copper cables, as necessary, and terminate on new pole. Re-run overhead lines. Recover existing pole and out-of-use overhead lines. | B       |                       | Design diversions                                                                                        | 8 weeks                          | 16 weeks                           | 8 weeks                 |                                                                                                                           |
|                                                                                                                         |                                                                                                                                                                                                                                                                                          |         |                       | Review diversion design.                                                                                 |                                  |                                    |                         | Review diversion design.                                                                                                  |
|                                                                                                                         |                                                                                                                                                                                                                                                                                          |         |                       | Agree measures to safeguard existing apparatus with Statutory Undertaker.                                |                                  |                                    |                         | Procure apparatus for diversion.                                                                                          |
|                                                                                                                         |                                                                                                                                                                                                                                                                                          |         |                       | Provide traffic management.                                                                              |                                  |                                    |                         | Agree traffic management                                                                                                  |
|                                                                                                                         |                                                                                                                                                                                                                                                                                          |         |                       | Consult and comply with Statutory Undertaker's requirements.                                             |                                  |                                    |                         | Install new duct, cables and pole. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br><br>Drawing Reference                                                                                                   | Location and Description                                                                                                                                                     | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                    | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                                                                           |                                                                                                                                                                              |         |                                                                           |                                                                                                                                  |                                  |                                    |                         |
|                                                                                                                                                                   |                                                                                                                                                                              |         |                                                                           | Inspect and supervise                                                                                                            |                                  |                                    |                         |
|                                                                                                                                                                   |                                                                                                                                                                              |         |                                                                           | Testing and commissioning.                                                                                                       |                                  |                                    |                         |
|                                                                                                                                                                   |                                                                                                                                                                              |         |                                                                           | Recover copper cables from original ducts.                                                                                       |                                  |                                    |                         |
| BT47<br>(BT Ref S1-10(R))<br>(Refer also to P246600/02/1/16208(S1) Rev A, 16209(S1) Rev A, 1602(S1) Rev A, 1603(S1) Rev B)<br><br>P246600/2700/B T/003, 005 & 006 | <b>B977 Realignment</b><br><br>Provide approx. 1600m of 1 No. 100mm PVC duct and associated joint boxes, in proposed road verge.<br><br>Draw-in copper cables, as necessary. | B       |                                                                           | Design diversions                                                                                                                | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                                                                                   |                                                                                                                                                                              |         | Review diversion design.                                                  | Review diversion design.                                                                                                         |                                  |                                    |                         |
|                                                                                                                                                                   |                                                                                                                                                                              |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                 |                                  |                                    |                         |
|                                                                                                                                                                   |                                                                                                                                                                              |         | Provide traffic management.                                               | Agree traffic management                                                                                                         |                                  |                                    |                         |
|                                                                                                                                                                   |                                                                                                                                                                              |         | Consult and comply with Statutory Undertaker's requirements.              | Install new duct, cables and joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                               | Location and Description                                                                                                                                                                                                                                                                    | Group * | Main Works by Company                                                                      | Works by Statutory Undertakers', Private Apparatus owners and others affected                           | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                   |                                                                                                                                                                                                                                                                                             |         |                                                                                            |                                                                                                         |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                             |         | Undertake any required protection works.                                                   | Undertake any required protection works.                                                                |                                  |                                    |                         |
| BT47A<br>(BT Ref S1-10(A))<br><br>(Refer also to P246600/02/1/1603(S1) Rev B)<br><br>P246600/2700/B T/006 | <b>Existing B977 south verge at Junction with proposed B977 Realignment (opposite Victoria Hall)</b><br><br>As required over approx. 38m slew and lower existing duct(s) in the verge of the existing B977 to achieve carriageway depth of cover for proposed junction with realigned B977. | B       | Accurately mark on site proposed changes to line and level of verge for proposed junction. | Review any proposed changes to line and level of verge: Assess extent of slewing and lowering required. | 8 weeks                          | 16 weeks                           | 2 weeks                 |
|                                                                                                           |                                                                                                                                                                                                                                                                                             |         | Agree measures to safeguard existing apparatus with Statutory Undertaker.                  | If required, procure apparatus for diversion.                                                           |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                             |         | Provide traffic management.                                                                | Agree traffic management                                                                                |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                             |         | Consult and comply with Statutory Undertaker's requirements.                               | As required slew and lower ducts.                                                                       |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                             |         | Undertake any required protection works.                                                   | Inspect and supervise                                                                                   |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br><br>Drawing Reference                                           | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                                                                                                   | Design and Material Order Period                                                   | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |                       |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                    |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |                       | Testing and commissioning.                                                                                                                                                                                                                                                                                                                                      |                                                                                    |                                    |                         |
| BT48<br>(BT Ref S1-11(A))<br><br>(Refer also to P246600/02/1/16215(S1) Rev A)<br><br>P246600/2700/B T/003 | <p><b>Existing A90 crossing for “The Holdings” (at approx. Ch. -600) (Temporary Diversion)</b></p> <p>Draw-in armoured cable (approx. 100m) and change-over circuits.</p> <p>Leave sufficient slack in the cable at either end to allow ducts and cable to be lowered (under extended road construction only).</p> <p>Lowering of ducts to be done in conjunction with Statutory Undertaker.</p> <p>Existing pole to be removed, New (temporary) pole to be provided. (Note – No connection required to No. 6 The Holdings (property to be demolished)).</p> <p>Note – Non-standard temporary works.</p> | B       |                       | Design diversions<br><br>Review diversion design.<br><br>Accurately mark on site proposed verge and carriageway levels.<br><br>Agree measures to safeguard existing apparatus with Statutory Undertaker.<br><br>Provide traffic management.<br><br>Consult and comply with Statutory Undertaker’s requirements.<br><br>Undertake any required protection works. | 8 weeks<br><br>8 weeks<br><br>8 weeks<br><br>8 weeks<br><br>8 weeks<br><br>8 weeks | 16 weeks                           | 8 weeks                 |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                         | Location and Description                                                                                                                                                                       | Group * | Main Works by Company                                                                                                                | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                   | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                             |                                                                                                                                                                                                |         |                                                                                                                                      |                                                                                                                                 |                                  |                                    |                         |
|                                                                                                     |                                                                                                                                                                                                |         | In conjunction with Statutory Undertaker: Lower BT Plant to acceptable level below new road construction and bury cable to new pole. | In conjunction with main contractor: Lower BT Plant to acceptable level below new road construction and bury cable to new pole. |                                  |                                    |                         |
|                                                                                                     |                                                                                                                                                                                                |         |                                                                                                                                      | Testing and commissioning.                                                                                                      |                                  |                                    |                         |
| BT49<br>(BT Ref S1-12(R))<br><br>(Refer also to P246600/02/1/16209(S1) Rev A)<br><br>P246600/2700/B | <b>'The Holdings' Access (off the Realigned B977)</b><br><br>Provide approx. 120m of 1 No. 100mm PVC duct and associated joint boxes, in proposed road verge.<br><br>Draw-in copper cables, as | B       |                                                                                                                                      | Design diversions                                                                                                               | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                     |                                                                                                                                                                                                |         | Review diversion design.                                                                                                             | Review diversion design.                                                                                                        |                                  |                                    |                         |
|                                                                                                     |                                                                                                                                                                                                |         | Agree measures to safeguard existing apparatus with Statutory Undertaker.                                                            | Procure apparatus for diversion.                                                                                                |                                  |                                    |                         |
|                                                                                                     |                                                                                                                                                                                                |         | Provide traffic management.                                                                                                          | Agree traffic management                                                                                                        |                                  |                                    |                         |



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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                 | Location and Description                                                                                                                                                                                                | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                         | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
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| <b>British Telecom – Openreach (BT)</b>                                                     |                                                                                                                                                                                                                         |         |                                                                           |                                                                                                                                       |                                  |                                    |                         |
| T/003                                                                                       | necessary.<br>Provide a new pole.<br>Re-run overhead lines to poles "F3", "F4" and "F6".<br>Recover abandoned pole "F5" and out-of-use overhead lines.                                                                  |         | Consult and comply with Statutory Undertaker's requirements.              | Install new duct, pole cables and joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                             |                                                                                                                                                                                                                         |         |                                                                           | Inspect and supervise                                                                                                                 |                                  |                                    |                         |
|                                                                                             |                                                                                                                                                                                                                         |         |                                                                           | Testing and commissioning.                                                                                                            |                                  |                                    |                         |
|                                                                                             |                                                                                                                                                                                                                         |         |                                                                           | Recover abandoned apparatus.                                                                                                          |                                  |                                    |                         |
| BT50<br>(BT Ref S1-13(R))<br>(Refer also to P246600/02/1/16209(S1) Rev A)<br>P246600/2700/B | <b>The Holdings Access (East end)</b><br>Provide approx. 50m of 1 No. 100mm PVC duct and associated joint boxes, in proposed road verge.<br><br>Draw-in copper cables, as necessary.<br>Recover abandoned pole and out- | B       |                                                                           | Design diversions                                                                                                                     | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                             |                                                                                                                                                                                                                         |         | Review diversion design.                                                  | Review diversion design.                                                                                                              |                                  |                                    |                         |
|                                                                                             |                                                                                                                                                                                                                         |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                      |                                  |                                    |                         |
|                                                                                             |                                                                                                                                                                                                                         |         | Provide traffic management.                                               | Agree traffic management.                                                                                                             |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                               | Location and Description                                                                                                                                                                                                                                                                            | Group * | Main Works by Company                                                              | Works by Statutory Undertakers', Private Apparatus owners and others affected                                            | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                   |                                                                                                                                                                                                                                                                                                     |         |                                                                                    |                                                                                                                          |                                  |                                    |                                                                                                                                                      |
| T/003                                                                                                     | of-use overhead lines.                                                                                                                                                                                                                                                                              |         | Consult and comply with Statutory Undertaker's requirements.                       | Install new duct and joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                                                                                                                                                      |
|                                                                                                           |                                                                                                                                                                                                                                                                                                     |         |                                                                                    | Inspect and supervise                                                                                                    |                                  |                                    |                                                                                                                                                      |
|                                                                                                           |                                                                                                                                                                                                                                                                                                     |         |                                                                                    | Testing and commissioning.                                                                                               |                                  |                                    |                                                                                                                                                      |
|                                                                                                           |                                                                                                                                                                                                                                                                                                     |         |                                                                                    | Recover abandoned apparatus.                                                                                             |                                  |                                    |                                                                                                                                                      |
| BT51<br>(BT Ref S1-12(A))<br><br>(Refer also to P246600/02/1/16214(S1) Rev A)<br><br>P246600/2700/B T/003 | <b>Eigie Road to Old Road (Temporary Diversion)</b><br><br>Provide approx. 192m of 4 No. temporary 100mm PVC ducts overground, generally along site fence line.<br><br>From joint box with temporary diversion BT37 to Eigie Road joint box provide approx. 73m of 2 No. temporary 100mm PVC ducts. | B       | Accurately mark on site the proposed excavation works. Establish site fence lines. | Design diversions                                                                                                        | 8 weeks                          | 16 weeks                           | 10 weeks<br><br>(for installation and testing but NOT including fibre optic cable change over:- typically this is 30 days but can be up to 90 days). |
|                                                                                                           |                                                                                                                                                                                                                                                                                                     |         | Review diversion design.                                                           | Review diversion design.                                                                                                 |                                  |                                    |                                                                                                                                                      |
|                                                                                                           |                                                                                                                                                                                                                                                                                                     |         | Agree measures to safeguard existing apparatus with Statutory Undertaker.          | Procure apparatus for diversion.                                                                                         |                                  |                                    |                                                                                                                                                      |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                            | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                             | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                     |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                     |         |                                                              |                                                                                                                                           |                                  |                                    |                                                             |
|                                                             | Buried at crossing of Eigie Road.<br><br>Provide optic fibre sub-duct and cable between the existing joints.<br><br>Divert cables into temporary ducts as required. |         | Provide traffic management.                                  | Agree traffic management.                                                                                                                 |                                  |                                    |                                                             |
|                                                             |                                                                                                                                                                     |         | Consult and comply with Statutory Undertaker's requirements. | Install ducts, cables, and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                                                             |
|                                                             |                                                                                                                                                                     |         | Undertake any required protection works.                     | Undertake any required protection works.                                                                                                  |                                  |                                    |                                                             |
|                                                             |                                                                                                                                                                     |         |                                                              | Testing and commissioning.                                                                                                                |                                  |                                    |                                                             |
|                                                             |                                                                                                                                                                     |         |                                                              | Recover optic fibre & copper cables. Demolish out-of-use joint boxes which are still accessible.                                          |                                  |                                    |                                                             |
| BT52<br>(BT Ref S1-12(R))                                   | <b>Balmedie East Roundabout to Old Road</b>                                                                                                                         | B       |                                                              | Design diversions                                                                                                                         | 8 weeks                          | 16 weeks                           | 12 weeks<br>(for installation and testing but NOT including |
|                                                             |                                                                                                                                                                     |         | Review diversion design.                                     | Review diversion design.                                                                                                                  |                                  |                                    |                                                             |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                               | Location and Description                                                                                                                                                                                                                                                       | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                              |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|--------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                   |                                                                                                                                                                                                                                                                                |         |                                                                           |                                                                                                                                              |                                  |                                    |                                                                                      |
| (Refer also to P246600/02/1/16214(S1) Rev A, 16215(S1) Rev A)<br><br>P246600/2700/B T/003 | Provide approx. 200m of 4 No. 100mm PVC ducts, and associated joint boxes, from proposed roundabout to verge of proposed realigned Old Road.<br><br>Provide optic fibre sub-duct and cable between the existing joints.<br><br>Divert cables into permanent ducts as required. |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                             |                                  |                                    | fibre optic cable change over:- typically this is 30 days but can be up to 90 days). |
|                                                                                           |                                                                                                                                                                                                                                                                                |         | Provide traffic management.                                               | Agree traffic management.                                                                                                                    |                                  |                                    |                                                                                      |
|                                                                                           |                                                                                                                                                                                                                                                                                |         | Consult and comply with Statutory Undertaker's requirements.              | Install new ducts, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                                                                                      |
|                                                                                           |                                                                                                                                                                                                                                                                                |         | Undertake any required protection works.                                  | Undertake any required protection works.                                                                                                     |                                  |                                    |                                                                                      |
|                                                                                           |                                                                                                                                                                                                                                                                                |         | Recover temporary overground ducts                                        | Inspect and supervise                                                                                                                        |                                  |                                    |                                                                                      |
|                                                                                           |                                                                                                                                                                                                                                                                                |         |                                                                           | Testing and commissioning.                                                                                                                   |                                  |                                    |                                                                                      |
| BT53<br>(BT Ref S1-13(R))                                                                 | <b>Balmedie East Roundabout to Eigie Road</b>                                                                                                                                                                                                                                  | B       |                                                                           | Design diversions                                                                                                                            | 8 weeks                          | 16 weeks                           | 12 Weeks<br>(for installation and testing but NOT including                          |
|                                                                                           |                                                                                                                                                                                                                                                                                |         | Review diversion design.                                                  | Review diversion design.                                                                                                                     |                                  |                                    |                                                                                      |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                               | Location and Description                                                                                                                                                                                                                                                         | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                              |
|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|--------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                   |                                                                                                                                                                                                                                                                                  |         |                                                                           |                                                                                                                                              |                                  |                                    |                                                                                      |
| (Refer also to P246600/02/1/16214(S1) Rev A, 16215(S1) Rev A)<br><br>P246600/2700/B T/003 | Provide approx. 128m of 2 No. 100mm PVC ducts, and associated joint boxes, from proposed roundabout to verge of proposed realigned Eigie Road.<br><br>Provide optic fibre sub-duct and cable between the existing joints.<br><br>Divert cables into permanent ducts as required. |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                             |                                  |                                    | fibre optic cable change over:- typically this is 30 days but can be up to 90 days). |
|                                                                                           |                                                                                                                                                                                                                                                                                  |         | Provide traffic management.                                               | Agree traffic management.                                                                                                                    |                                  |                                    |                                                                                      |
|                                                                                           |                                                                                                                                                                                                                                                                                  |         | Consult and comply with Statutory Undertaker's requirements.              | Install new ducts, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                                                                                      |
|                                                                                           |                                                                                                                                                                                                                                                                                  |         | Undertake any required protection works.                                  | Undertake any required protection works.                                                                                                     |                                  |                                    |                                                                                      |
|                                                                                           |                                                                                                                                                                                                                                                                                  |         | Recover temporary overground ducts.                                       | Inspect and supervise                                                                                                                        |                                  |                                    |                                                                                      |
|                                                                                           |                                                                                                                                                                                                                                                                                  |         |                                                                           | Testing and commissioning.                                                                                                                   |                                  |                                    |                                                                                      |
| BT54<br>(BT Ref S1-14(R))                                                                 | <b>Balmedie Junction Roundabouts Link Road (excluding Underpass structure)</b>                                                                                                                                                                                                   | B       |                                                                           | Design diversions                                                                                                                            | 8 weeks                          | 16 weeks                           | 8 weeks                                                                              |
|                                                                                           |                                                                                                                                                                                                                                                                                  |         | Review diversion design.                                                  | Review diversion design.                                                                                                                     |                                  |                                    |                                                                                      |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                | Location and Description                                                                                                                      | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                    | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                    |                                                                                                                                               |         |                                                                           |                                                                                                                                  |                                  |                                    |                         |
| (Refer also to P246600/02/1/16214(S1) Rev A)<br><br>P246600/2700/B T/003   | Provide approx. 180m of 1 No. 100mm PVC duct and associated joint boxes, in proposed south verge.<br><br>Draw-in copper cables, as necessary. |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                 |                                  |                                    |                         |
|                                                                            |                                                                                                                                               |         | Provide traffic management.                                               | Agree traffic management.                                                                                                        |                                  |                                    |                         |
|                                                                            |                                                                                                                                               |         | Consult and comply with Statutory Undertaker's requirements.              | Install new duct, cables and joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                            |                                                                                                                                               |         | Undertake any required protection works.                                  | Undertake any required protection works.                                                                                         |                                  |                                    |                         |
|                                                                            |                                                                                                                                               |         |                                                                           | Testing and commissioning.                                                                                                       |                                  |                                    |                         |
| BT55<br>(BT Ref S1-14(R))<br><br>(Refer also to P246600/02/1/16214(S1) Rev | <b>Balmedie Junction Underpass Structure</b><br><br>Provide approx. 55m of 1 No. HDPE duct in new structure.                                  | B       |                                                                           | Design diversions                                                                                                                | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                            |                                                                                                                                               |         | Review diversion design.                                                  | Review diversion design.                                                                                                         |                                  |                                    |                         |
|                                                                            |                                                                                                                                               |         |                                                                           | Procure apparatus for diversion.                                                                                                 |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                          | Location and Description                                                                                                                                                                                                                                                                                                                 | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected          | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                              |                                                                                                                                                                                                                                                                                                                                          |         |                                                                           |                                                                                        |                                  |                                    |                         |
| A)<br><br>P246600/2700/B<br>T/003                                                                                    | Joints in ducts to be taped to avoid concrete ingress.                                                                                                                                                                                                                                                                                   |         | Consult and comply with Statutory Undertaker's requirements.              | Supply HDPE duct to main contractor.                                                   |                                  |                                    |                         |
|                                                                                                                      |                                                                                                                                                                                                                                                                                                                                          |         | Install new duct within structure.                                        | Inspect and supervise.                                                                 |                                  |                                    |                         |
|                                                                                                                      |                                                                                                                                                                                                                                                                                                                                          |         | Undertake any required protection works.                                  | Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                                                      |                                                                                                                                                                                                                                                                                                                                          |         |                                                                           | Testing and commissioning.                                                             |                                  |                                    |                         |
| BT56<br>(BT Ref S2-01(A))<br><br>(Refer also to P246600/02/1/16216(S2) Rev B, 16217(S2) Rev A)<br><br>P246600/2700/B | <b>Existing Keir Farm Underpass to Old Road (Opposite existing B977 junction)</b><br><br>Provide approx. 565m of 1 No. PVC duct to generally follow route of existing ducts.<br><br>Note – Section from joint box reference JF4 (to east of existing Keir Farm Underpass) to proposed new joint box for Diversions BT57 & BT 58 to reuse | B       |                                                                           | Design diversions                                                                      | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                                      |                                                                                                                                                                                                                                                                                                                                          |         | Review diversion design.                                                  | Review diversion design.                                                               |                                  |                                    |                         |
|                                                                                                                      |                                                                                                                                                                                                                                                                                                                                          |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                       |                                  |                                    |                         |
|                                                                                                                      |                                                                                                                                                                                                                                                                                                                                          |         | Provide traffic management.                                               | Agree traffic management.                                                              |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                   | Location and Description                                                                                                                                                                                                               | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                        | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                       |                                                                                                                                                                                                                                        |         |                                                                           |                                                                                                                                                                                      |                                  |                                    |                         |
| T/004                                                                         | existing duct. (existing duct may require to be lowered).<br><br>Note – See also Diversion Ref. BT56A for works to joint box ref. JF4.<br><br>Draw-in copper cables, from original ducts and transfer.                                 |         | Consult and comply with Statutory Undertaker's requirements.              | Install new duct and associated joint boxes. Lower / slew existing duct (if required).<br><br>Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                               |                                                                                                                                                                                                                                        |         |                                                                           | Inspect and supervise                                                                                                                                                                |                                  |                                    |                         |
|                                                                               |                                                                                                                                                                                                                                        |         |                                                                           | Testing and commissioning.                                                                                                                                                           |                                  |                                    |                         |
|                                                                               |                                                                                                                                                                                                                                        |         |                                                                           | Recover copper cables from original ducts as possible.                                                                                                                               |                                  |                                    |                         |
| BT56A<br>(BT Ref S2-01(R))<br><br>(Refer also to P246600/02/1/16216(S2) Rev B | <b>Existing Keir Farm Road (to east of Underpass) at proposed passing place</b><br><br>Existing joint box reference JF4 to be rebuilt to carriageway standard (for proposed placing pass). If required, joint box to be moved to suit. | B       |                                                                           | Design diversions                                                                                                                                                                    | 8 weeks                          | 16 weeks                           | 4 weeks                 |
|                                                                               |                                                                                                                                                                                                                                        |         | Review diversion design.                                                  | Review diversion design.                                                                                                                                                             |                                  |                                    |                         |
|                                                                               |                                                                                                                                                                                                                                        |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                                                                     |                                  |                                    |                         |



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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br><br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
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| <b>British Telecom – Openreach (BT)</b>                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |                                                              |                                                                                                                                                                                                     |                                  |                                    |                         |
| P246600/2700/B T/004                                            | Existing pole (Ref. "DP11") to be removed and replaced with a new pole located to the south of the existing south east wing wall. An additional pole shall be located to the north of the north east wing wall (both within the LMA).<br><br>New duct to be provided from rebuilt joint box JF4 to new south pole.<br><br>Provide new overhead cables as required to various properties (including passing over Keir Farm Underpass Road). Prior to overhead cables being installed: trim back trees (as required).<br><br>Lay new ducts to "Victory" and "Post Office" properties. Duct to cross Old Road.<br><br>Draw in copper cables as necessary. |         | Provide traffic management.                                  | Agree traffic management.                                                                                                                                                                           |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | Consult and comply with Statutory Undertaker's requirements. | Rebuilt joint box ref. JF4 to carriageway standard. (Relocate if required).<br><br>Provide new poles to south / north of existing underpass wingwalls.<br><br>Provide new duct to new "south" pole. |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | Trim back trees (within LMA) to suit new overhead cables.    | Undertake jointing, reinstatement and connection works. Transfer cables, as necessary.                                                                                                              |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |                                                              | Testing and commissioning.                                                                                                                                                                          |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |                                                              | Recover redundant overhead copper cables (as required).<br><br>Remove existing pole "DP11".                                                                                                         |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                                                 | Location and Description                                                                                                                                                                                                                                                                                                                                                                                | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                               | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
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| <b>British Telecom – Openreach (BT)</b>                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                           |                                                                                                                                             |                                  |                                    |                         |
| BT57<br>(BT Ref S2-02(A))<br><br>(Refer also to P246600/02/1/16216(S2) Rev A, 16217(S2) Rev A, 16218(S2) Rev A)<br><br>P246600/2700/B T/004 | <b>Proposed pedestrian footpath from the existing Keir Farm Underpass to the existing B977 (Temporary Diversion)</b><br><br>Provide approx. 615m 1 No. temporary 100mm PVC duct overground along site fence line boxes for the length of the proposed footpath. Bury duct at vehicle accesses, and build joint boxes as indicated.<br><br>Divert cables into temporary and permanent ducts as required. | B       |                                                                           | Design diversions                                                                                                                           | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                         |         | Review diversion design.                                                  | Review diversion design.                                                                                                                    |                                  |                                    |                         |
|                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                         |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                            |                                  |                                    |                         |
|                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                         |         | Provide traffic management.                                               | Agree traffic management.                                                                                                                   |                                  |                                    |                         |
|                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                         |         | Consult and comply with Statutory Undertaker's requirements.              | Install new duct, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                           | Inspect and supervise                                                                                                                       |                                  |                                    |                         |
|                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                           | Testing and commissioning.                                                                                                                  |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                                                 | Location and Description                                                                                                                                                                                                                                            | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected                            | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |                                                                                                                                             |
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| <b>British Telecom – Openreach (BT)</b>                                                                                                     |                                                                                                                                                                                                                                                                     |         |                       |                                                                                                          |                                  |                                    |                         |                                                                                                                                             |
|                                                                                                                                             |                                                                                                                                                                                                                                                                     |         |                       | Demolish temporary joint boxes which are still accessible.<br>Recover copper cables from original ducts. |                                  |                                    |                         |                                                                                                                                             |
| BT58<br>(BT Ref S2-02(R))<br><br>(Refer also to P246600/02/1/16216(S2) Rev A, 16217(S2) Rev A, 16218(S2) Rev A)<br><br>P246600/2700/B T/004 | <b>Proposed pedestrian footpath from the existing Keir Farm Underpass to the existing B977</b><br><br>Provide approx. 622m 1 No. 100mm PVC duct and associated joint boxes, in proposed pedestrian footpath west verge.<br><br>Draw-in copper cables, as necessary. | B       |                       | Design diversions                                                                                        | 8 weeks                          | 16 weeks                           | 8 weeks                 |                                                                                                                                             |
|                                                                                                                                             |                                                                                                                                                                                                                                                                     |         |                       | Review diversion design.                                                                                 |                                  |                                    |                         | Review diversion design.                                                                                                                    |
|                                                                                                                                             |                                                                                                                                                                                                                                                                     |         |                       | Agree measures to safeguard existing apparatus with Statutory Undertaker.                                |                                  |                                    |                         | Procure apparatus for diversion.                                                                                                            |
|                                                                                                                                             |                                                                                                                                                                                                                                                                     |         |                       | Provide traffic management.                                                                              |                                  |                                    |                         | Agree traffic management.                                                                                                                   |
|                                                                                                                                             |                                                                                                                                                                                                                                                                     |         |                       | Consult and comply with Statutory Undertaker's requirements.                                             |                                  |                                    |                         | Install new duct, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |
|                                                                                                                                             |                                                                                                                                                                                                                                                                     |         |                       | Inspect and supervise                                                                                    |                                  |                                    |                         |                                                                                                                                             |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                     | Location and Description                                                                                                                                                                                                                                                     | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                  | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                         |                                                                                                                                                                                                                                                                              |         |                                                                           |                                                                                                                |                                  |                                    |                                                                                                                                                      |
|                                                                                                                 |                                                                                                                                                                                                                                                                              |         |                                                                           | Testing and commissioning.                                                                                     |                                  |                                    |                                                                                                                                                      |
|                                                                                                                 |                                                                                                                                                                                                                                                                              |         | Recover temporary overground ducts.                                       | Recover cables from original ducts, where possible. Demolish temporary joint boxes which are still accessible. |                                  |                                    |                                                                                                                                                      |
| BT59<br>(BT Ref S2-03(A))<br><br>(Refer also to P246600/02/1/16218(S2) Rev A, 16219(S2) Rev A, 16220(S2) Rev A) | <b>Balmedie Link Road (Old road tie-in into the existing A90) to North of Balmedie (Temporary Diversion)</b><br><br>Provide approx. 540m 3 No. temporary 100mm PVC duct overground along site fence line. Bury duct at vehicle accesses, and build joint boxes as indicated. | B       |                                                                           | Design diversions                                                                                              | 8 weeks                          | 16 weeks                           | 10 weeks<br><br>(for installation and testing but NOT including fibre optic cable change over:- typically this is 30 days but can be up to 90 days). |
|                                                                                                                 |                                                                                                                                                                                                                                                                              |         | Review diversion design.                                                  | Review diversion design.                                                                                       |                                  |                                    |                                                                                                                                                      |
|                                                                                                                 |                                                                                                                                                                                                                                                                              |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                               |                                  |                                    |                                                                                                                                                      |
|                                                                                                                 |                                                                                                                                                                                                                                                                              |         | Provide traffic management.                                               | Agree traffic management.                                                                                      |                                  |                                    |                                                                                                                                                      |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                  | Location and Description                                                                                                                                                                                                    | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                                                   |
|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                      |                                                                                                                                                                                                                             |         |                                                                           |                                                                                                                                              |                                  |                                    |                                                                                                                           |
| P246600/2700/B<br>T/004 & 007                                                                                | Provide optic fibre sub-duct and cable between the existing joints. Draw-in copper cables, from original ducts, as necessary<br><br>Divert cables into temporary ducts as required.                                         |         | Consult and comply with Statutory Undertaker's requirements.              | Install new ducts, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                                                                                                                           |
|                                                                                                              |                                                                                                                                                                                                                             |         |                                                                           | Inspect and supervise                                                                                                                        |                                  |                                    |                                                                                                                           |
|                                                                                                              |                                                                                                                                                                                                                             |         |                                                                           | Testing and commissioning.                                                                                                                   |                                  |                                    |                                                                                                                           |
|                                                                                                              |                                                                                                                                                                                                                             |         |                                                                           | Recover cables from original ducts, where possible. Demolish original joint boxes which are still accessible.                                |                                  |                                    |                                                                                                                           |
| BT60<br>(BT Ref S2-03(R))<br><br>(Refer also to P246600/02/1/16218(S2) Rev A, 16219(S2) Rev A, 16220(S2) Rev | <b>Balmedie Link Road (Old road tie-in into the existing A90) to North of Balmedie</b><br><br>Provide approx. 520m of 4 No. 100mm PVC ducts in west verge and build joint boxes as indicated. Also provide 1 No. 100mm duct | B       |                                                                           | Design diversions                                                                                                                            | 8 weeks                          | 16 weeks                           | 12 weeks<br><br>(for installation and testing but NOT including fibre optic cable change over:- typically this is 30 days |
|                                                                                                              |                                                                                                                                                                                                                             |         | Review diversion design.                                                  | Review diversion design.                                                                                                                     |                                  |                                    |                                                                                                                           |
|                                                                                                              |                                                                                                                                                                                                                             |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                             |                                  |                                    |                                                                                                                           |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                           | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                               | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**    |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|----------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                    |         |                                                              |                                                                                                                                             |                                  |                                    |                            |
| A)<br><br>P246600/2700/B<br>T/004 & 007                     | (approx. 30m) crossing under Balmedie Link Road at approx. Ch. 125 to tie in with existing joint ref. CPLG143.<br><br>Provide optic fibre sub-duct and cable between the existing joints. Draw-in copper cables, from original ducts, as possible. |         | Provide traffic management.                                  | Agree traffic management.                                                                                                                   |                                  |                                    | but can be up to 90 days). |
|                                                             |                                                                                                                                                                                                                                                    |         | Consult and comply with Statutory Undertaker's requirements. | Install new duct, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                            |
|                                                             |                                                                                                                                                                                                                                                    |         | Recover temporary overground ducts.                          | Inspect and supervise.                                                                                                                      |                                  |                                    |                            |
|                                                             |                                                                                                                                                                                                                                                    |         |                                                              | Testing and commissioning.                                                                                                                  |                                  |                                    |                            |
|                                                             |                                                                                                                                                                                                                                                    |         |                                                              | Recover optic fibre cables from original ducts. Demolish temporary joint boxes which are still accessible                                   |                                  |                                    |                            |
| BT60A<br>(BT Ref S2-03a(R))                                 | <b>Balmedie Link Road (near "The Bungalow", Blairton)</b><br><br>Provide approx. 20m of 1 No. 100mm HDPE duct under                                                                                                                                | B       |                                                              | Design diversions                                                                                                                           | 8 weeks                          | 16 weeks                           | 2 weeks                    |
|                                                             |                                                                                                                                                                                                                                                    |         | Review diversion design.                                     | Review diversion design.                                                                                                                    |                                  |                                    |                            |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference             | Location and Description                                                                                                                                                                                                                                                                                                  | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                 | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
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| <b>British Telecom – Openreach (BT)</b>                                 |                                                                                                                                                                                                                                                                                                                           |         |                                                                           |                                                                                                               |                                  |                                    |                         |
| (Refer also to P246600/02/1/16219(S2) Rev B<br><br>P246600/2700/B T/007 | proposed Balmedie Link Road at approx. Ch. 330 to connect proposed joint box in west verge of Link Road to existing pole / joint ref. "29" (located to the south west of The Bungalow, Blairton.<br><br>Draw-in copper cables, as necessary.<br><br>Note – Connections to be undertaken concurrently with diversion BT60. |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                              |                                  |                                    |                         |
|                                                                         |                                                                                                                                                                                                                                                                                                                           |         | Provide traffic management.                                               | Agree traffic management.                                                                                     |                                  |                                    |                         |
|                                                                         |                                                                                                                                                                                                                                                                                                                           |         | Consult and comply with Statutory Undertaker's requirements.              | Supply HDPE duct to Company.                                                                                  |                                  |                                    |                         |
|                                                                         |                                                                                                                                                                                                                                                                                                                           |         | Install new HDPE duct.                                                    | Inspect and supervise. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                         |                                                                                                                                                                                                                                                                                                                           |         |                                                                           | Testing and commissioning.                                                                                    |                                  |                                    |                         |
|                                                                         |                                                                                                                                                                                                                                                                                                                           |         |                                                                           | Recover copper cables from temporary diversion.                                                               |                                  |                                    |                         |
| BT61                                                                    | <b>South Orrock Underpass</b>                                                                                                                                                                                                                                                                                             | B       |                                                                           | Design diversions                                                                                             | 8 weeks                          | 16 weeks                           | 8 weeks                 |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                       | Location and Description                                                                                                                                                                                                                                                                                                                                   | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                               | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
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| <b>British Telecom – Openreach (BT)</b>                                                           |                                                                                                                                                                                                                                                                                                                                                            |         |                                                                           |                                                                                                                                             |                                  |                                    |                         |
| (BT Ref S2-04(A))<br><br>(Refer also to P246600/02/1/16221(S2) Rev A)<br><br>P246600/2700/B T/007 | <b>Access Road (Temporary Diversion) (excluding proposed A90 footprint)</b><br><br>Provide approx. 115m (to east of proposed A90) and approx. 195m (to west of proposed A90) of 1 No. temporary armoured cable. Provide and bury duct at vehicle accesses, and build joint boxes as indicated.<br><br>Note – existing is partly formed of overhead cables. |         | Review diversion design.                                                  | Review diversion design.                                                                                                                    |                                  |                                    |                         |
|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                            |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                            |                                  |                                    |                         |
|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                            |         | Provide traffic management.                                               | Agree traffic management.                                                                                                                   |                                  |                                    |                         |
|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                            |         | Consult and comply with Statutory Undertaker's requirements.              | Install new duct, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                            |         |                                                                           | Inspect and supervise.                                                                                                                      |                                  |                                    |                         |
|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                            |         |                                                                           | Testing and commissioning.                                                                                                                  |                                  |                                    |                         |



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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                               | Location and Description                                                                                                                                                                                                                                                                                                                                               | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
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| <b>British Telecom – Openreach (BT)</b>                                                                   |                                                                                                                                                                                                                                                                                                                                                                        |         |                                                                           |                                                                                                                                                     |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                        |         |                                                                           | Recover copper cables, from original ducts, as necessary. Recover redundant poles.<br><br>Demolish original joint boxes which are still accessible. |                                  |                                    |                         |
| BT62<br>(BT Ref S2-05(A))<br><br>(Refer also to P246600/02/1/16221(S2) Rev A)<br><br>P246600/2700/B T/007 | <b>South Orrock Underpass Access Road (proposed A90 footprint only) (Temporary Diversion)</b><br><br>Provide approx. 55m of 1 No. HDPE duct. Duct to be laid a minimum of 300mm below proposed excavations. Duct to be bedded in and surrounded by a minimum of 75mm of sand. Take duct up to 600mm below surface at each end.<br><br>Draw-in armoured cable (refer to | B       |                                                                           | Design diversions                                                                                                                                   | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                        |         | Review diversion design.                                                  | Review diversion design.                                                                                                                            |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                        |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                                    |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                        |         | Provide traffic management.                                               | Agree traffic management.                                                                                                                           |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                        |         | Consult and comply with Statutory Undertaker's requirements.              | Supply HDPE duct to Company.                                                                                                                        |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                       | Location and Description                                                                                                                                                                                                                                                                       | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                 | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                           |                                                                                                                                                                                                                                                                                                |         |                                                                           |                                                                                                               |                                  |                                    |                         |
|                                                                                                   | diversion BT61).                                                                                                                                                                                                                                                                               |         | Install new duct.                                                         | Inspect and supervise. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                                   |                                                                                                                                                                                                                                                                                                |         |                                                                           | Testing and commissioning.                                                                                    |                                  |                                    |                         |
| BT63<br>(BT Ref S2-04(R))<br>(Refer also to P246600/02/1/16221(S2) Rev A)<br>P246600/2700/B T/007 | <b>South Orrock Underpass Access Road and Spur (excluding proposed South Orrock Underpass)</b><br><br>Provide approx. 125m (to east of Underpass) and approx. 190m (to west of Underpass) of 1 No. 100mm PVC duct, and associated joint boxes, as indicated. Also provide approx. 18m of 1 No. | B       |                                                                           | Design diversions                                                                                             | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                   |                                                                                                                                                                                                                                                                                                |         | Review diversion design.                                                  | Review diversion design.                                                                                      |                                  |                                    |                         |
|                                                                                                   |                                                                                                                                                                                                                                                                                                |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                              |                                  |                                    |                         |
|                                                                                                   |                                                                                                                                                                                                                                                                                                |         | Provide traffic management.                                               | Agree traffic management                                                                                      |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                    | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                               | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                             |         |                                                              |                                                                                                                                             |                                  |                                    |                         |
|                                                             | 100mm PVC duct as spur off main duct to connect into existing duct feeding Orrock House & Mains of Orrock.<br><br>Draw-in copper cables, from original ducts, as necessary. |         | Consult and comply with Statutory Undertaker's requirements. | Install new duct, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                             |                                                                                                                                                                             |         | Recover temporary overground ducts.                          | Inspect and supervise.                                                                                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                             |         |                                                              | Testing and commissioning.                                                                                                                  |                                  |                                    |                         |
|                                                             |                                                                                                                                                                             |         |                                                              | Recover copper cables, from original ducts, as necessary. Demolish temporary joint boxes which are still accessible.                        |                                  |                                    |                         |
| BT64<br>(BT Ref S2-05(R))                                   | <b>South Orrock Underpass Structure</b>                                                                                                                                     | B       |                                                              | Design diversions                                                                                                                           | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                             |                                                                                                                                                                             |         | Review diversion design.                                     | Review diversion design.                                                                                                                    |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                   | Location and Description                                                                                                                                                                    | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                       |                                                                                                                                                                                             |         |                                                                           |                                                                               |                                  |                                    |                         |
| (Refer also to P246600/02/1/16221(S2) Rev A)<br>P246600/2700/B T/007          | Provide approx. 40m of 1 No. HDPE duct.<br><br>Joints in duct to be taped to avoid concrete ingress.<br><br>Draw-in copper cables, from original ducts, as necessary.                       |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                                               |                                                                                                                                                                                             |         | Provide traffic management.                                               | Agree traffic management.                                                     |                                  |                                    |                         |
|                                                                               |                                                                                                                                                                                             |         | Consult and comply with Statutory Undertaker's requirements.              | Supply HDPE duct to Company.                                                  |                                  |                                    |                         |
|                                                                               |                                                                                                                                                                                             |         | Install new duct in structure.                                            | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                                               |                                                                                                                                                                                             |         |                                                                           | Testing and commissioning.                                                    |                                  |                                    |                         |
| BT65<br>(BT Ref S2-06(A))<br><br>(Refer also to P246600/02/1/16223(S2) Rev A) | <b>Proposed A90 at approx. Ch. 1775, east of Orrock Access Realignment (Temporary Diversions)</b><br><br>Provide approx. 80m of 1 No. 100mm HDPE duct under proposed A90. Duct to be laid a | B       |                                                                           | Design diversions                                                             | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                               |                                                                                                                                                                                             |         | Review diversion design.                                                  | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                               |                                                                                                                                                                                             |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                              |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                           | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                         |         |                                                                          |                                                                                                         |                                  |                                    |                         |
| P246600/2700/B<br>T/008                                     | minimum of 300mm below proposed excavations. Duct to be bedded in and surrounded by a minimum of 75mm of sand. Take duct up to 600mm below surface at each end.<br><br>Draw-in copper cables, as necessary, and erect new pole to east of proposed A90. |         | Provide traffic management.                                              | Agree traffic management.                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                         |         | Consult and comply with Statutory Undertaker's requirements.             | Supply HDPE duct to Company.                                                                            |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                         |         | Install new duct.                                                        | Inspect and supervise                                                                                   |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                         |         |                                                                          | Erect new pole. Undertake jointing, reinstatement and connection Works.                                 |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                         |         |                                                                          | Testing and commissioning.                                                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                         |         |                                                                          | Remove redundant pole.                                                                                  |                                  |                                    |                         |
| BT66<br>(BT Ref S2-07(A))<br>(Refer also to                 | <b>Existing A90 west verge at Junction with the proposed Orrock Overbridge Access Road</b><br><br>As required over approx. 35m                                                                                                                          | B       | Accurately mark on site any proposed changes to line and level of verge. | Review any proposed changes to line and level of verge: Assess extent of slewing and lowering required. | 8 weeks                          | 16 weeks                           | 8 weeks                 |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                   | Location and Description                                                                                                                                                                | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                       |                                                                                                                                                                                         |         |                                                                           |                                                                               |                                  |                                    |                         |
| P246600/02/1/16224(S2) Rev A)<br><br>P246600/2700/B T/008 & 009               | slew and lower ducts in the verge of the existing A90 carriageway to achieve carriageway depth of cover.                                                                                |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                                               |                                                                                                                                                                                         |         | Provide traffic management.                                               | Agree traffic management.                                                     |                                  |                                    |                         |
|                                                                               |                                                                                                                                                                                         |         | Consult and comply with Statutory Undertaker's requirements.              | As required slew and lower ducts.                                             |                                  |                                    |                         |
|                                                                               |                                                                                                                                                                                         |         | Undertake any required protection works.                                  | Inspect and supervise                                                         |                                  |                                    |                         |
|                                                                               |                                                                                                                                                                                         |         |                                                                           | Testing and commissioning.                                                    |                                  |                                    |                         |
| BT67<br>(BT Ref S2-08(R))<br><br>(Refer also to P246600/02/1/16224(S2) Rev A) | <b>Orrock Overbridge Access Road (excluding Overbridge)</b><br><br>Provide approx. 245m (to east of Overbridge) and approx. 140m (to west of Overbridge) and associated joint boxes, as | B       |                                                                           | Design diversions                                                             | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                               |                                                                                                                                                                                         |         | Review diversion design.                                                  | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                               |                                                                                                                                                                                         |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                              |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                          | Location and Description                                                                                                                                                                            | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                               | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                              |                                                                                                                                                                                                     |         |                                                                           |                                                                                                                                             |                                  |                                    |                         |
| P246600/2700/B<br>T/008 & 009                                                                        | indicated.<br>Draw-in copper cables.                                                                                                                                                                |         | Provide traffic management.                                               | Agree traffic management.                                                                                                                   |                                  |                                    |                         |
|                                                                                                      |                                                                                                                                                                                                     |         | Consult and comply with Statutory Undertaker's requirements.              | Install new duct, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                                      |                                                                                                                                                                                                     |         |                                                                           | Inspect and supervise                                                                                                                       |                                  |                                    |                         |
|                                                                                                      |                                                                                                                                                                                                     |         |                                                                           | Testing and commissioning.                                                                                                                  |                                  |                                    |                         |
| BT68<br>(BT Ref S2-09(R))<br>(Refer also to P246600/02/1/16224(S2) Rev A)<br>P246600/2700/B<br>T/008 | <b>Orrock Overbridge</b><br><br>Provide approx. 66m of 1 No. HDPE duct over structure.<br><br>Joints in duct to be taped to avoid concrete ingress.<br><br>Draw-in copper cables (as part of BT67). | B       |                                                                           | Design diversions                                                                                                                           | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                      |                                                                                                                                                                                                     |         | Review diversion design.                                                  | Review diversion design.                                                                                                                    |                                  |                                    |                         |
|                                                                                                      |                                                                                                                                                                                                     |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                            |                                  |                                    |                         |
|                                                                                                      |                                                                                                                                                                                                     |         | Provide traffic management.                                               | Agree traffic management                                                                                                                    |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                               | Location and Description                                                                                                                                                                                                                                             | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected          | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                   |                                                                                                                                                                                                                                                                      |         |                                                                           |                                                                                        |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                      |         | Consult and comply with Statutory Undertaker's requirements.              | Supply HDPE duct to Company.                                                           |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                      |         | Install new duct in structure.                                            | Inspect and supervise.                                                                 |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                      |         |                                                                           | Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                      |         |                                                                           | Testing and commissioning.                                                             |                                  |                                    |                         |
| BT69<br>(BT Ref S2-10(A))<br><br>(Refer also to P246600/02/1/16226(S2) Rev A)<br><br>P246600/2700/B T/009 | <b>Proposed A90 at approx. Ch. 2420 adjacent to south end of Hill of Menie Croft Realignment (Temporary Diversion)</b><br><br>Provide approx. 92m of 1 No. HDPE duct in proposed A90, with associated joint boxes, as indicated.<br><br>Duct to be laid a minimum of | B       |                                                                           | Design diversions                                                                      | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                           |                                                                                                                                                                                                                                                                      |         | Review diversion design.                                                  | Review diversion design.                                                               |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                      |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                       |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                      |         | Provide traffic management.                                               | Agree traffic management                                                               |                                  |                                    |                         |



## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                         |         |                                                              |                                                                               |                                  |                                    |                         |
|                                                             | 300mm below proposed excavations. Duct to be bedded in and surrounded by a minimum of 75mm of sand. Take duct up to 600mm below surface at each end.<br><br>Draw-in copper cables, from original ducts. |         | Consult and comply with Statutory Undertaker's requirements. | Supply HDPE duct to Company.                                                  |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                         |         | Install new duct.                                            | Install associated joint boxes. Extent duct into joint boxes.                 |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                         |         | Undertake any required protection works.                     | Undertake jointing, reinstatement and connection Works.                       |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                         |         |                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                         |         |                                                              | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                         |         |                                                              | Demolish original joint boxes which are still accessible.                     |                                  |                                    |                         |
| BT70<br>(BT Ref S2-11(R))                                   | <b>Hill of Menie Croft Realignment</b><br><br>Provide approx. 340m of 1 No.                                                                                                                             | B       |                                                              | Design diversions                                                             | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                             |                                                                                                                                                                                                         |         | Review diversion design.                                     | Review diversion design.                                                      |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                           | Location and Description                                                                                                  | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                               | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                               |                                                                                                                           |         |                                                                           |                                                                                                                                             |                                  |                                    |                         |
| (Refer also to P246600/02/1/16226(S2) Rev A, 16228(S2) Rev A)<br>P246600/2700/B T/009 | 100mm PVC duct, and associated joint boxes, as indicated.<br><br>Draw-in copper cables, from original ducts, as possible. |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                            |                                  |                                    |                         |
|                                                                                       |                                                                                                                           |         | Provide traffic management.                                               | Agree traffic management                                                                                                                    |                                  |                                    |                         |
|                                                                                       |                                                                                                                           |         | Consult and comply with Statutory Undertaker's requirements.              | Install new duct, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                       |                                                                                                                           |         | Recover temporary overground ducts.                                       | Inspect and supervise.                                                                                                                      |                                  |                                    |                         |
|                                                                                       |                                                                                                                           |         |                                                                           | Testing and commissioning.                                                                                                                  |                                  |                                    |                         |
|                                                                                       |                                                                                                                           |         |                                                                           | Demolish temporary joint boxes which are still accessible. Recover copper cables from original ducts.                                       |                                  |                                    |                         |
| BT71                                                                                  | <b>Dambrae Underpass Access</b>                                                                                           | B       |                                                                           | Design diversions                                                                                                                           | 8 weeks                          | 16 weeks                           | 8 weeks                 |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                        | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                      | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                           |                                                                                                                    |                                  |                                    |                         |
| (BT Ref S2-12(A))<br><br>(Refer also to P246600/02/1/16227(S2) Rev A, 16228(S2) Rev A)<br><br>P246600/2700/B T/009 | <b>Road (excluding proposed A90 footprint adjacent to Dambrae Underpass) (Temporary Diversion)</b><br><br>Provide approx. 125m (to east of proposed underpass) and approx. 270m (to west of proposed underpass) of 1 No. temporary armoured cable over ground, where possible, along site fence lines. Provide buried duct at vehicle accesses.<br><br>Intercept cables into temporary and permanent ducts as required. |         | Review diversion design.                                                  | Review diversion design.                                                                                           |                                  |                                    |                         |
|                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                   |                                  |                                    |                         |
|                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Provide traffic management.                                               | Agree traffic management.                                                                                          |                                  |                                    |                         |
|                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Consult and comply with Statutory Undertaker's requirements.              | Install new armoured cable. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                           | Inspect and supervise                                                                                              |                                  |                                    |                         |
|                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                           | Testing and commissioning.                                                                                         |                                  |                                    |                         |
|                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                           | Recover copper cables from original ducts as possible. Demolish original joint boxes which are still accessible.   |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                               | Location and Description                                                                                                                                                                                                                                                                                                                                                         | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                 | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                   |                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                                           |                                                                                                               |                                  |                                    |                         |
| BT72<br>(BT Ref S2-13(A))<br><br>(Refer also to P246600/02/1/16228(S2) Rev A)<br><br>P246600/2700/B T/009 | <b>Dabrae Underpass Access Road (proposed A90 footprint only)(Temporary Diversion)</b><br><br>Provide approx. 62m of 1 No. HDPE duct. Duct to be laid a minimum of 300mm below proposed excavations. Duct to be bedded in and surrounded by a minimum of 75mm of sand. Take duct up to 600mm below surface at each end.<br><br>Draw-in armoured cable (refer to diversion BT71). | B       |                                                                           | Design diversions                                                                                             | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                  |         | Review diversion design.                                                  | Review diversion design.                                                                                      |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                  |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                              |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                  |         | Provide traffic management.                                               | Agree traffic management                                                                                      |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                  |         | Consult and comply with Statutory Undertaker's requirements.              | Supply HDPE duct to Company.                                                                                  |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                  |         | Install new duct.                                                         | Inspect and supervise. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                                           | Testing and commissioning.                                                                                                                                                                                                                                                                                                                                                       |         |                                                                           |                                                                                                               |                                  |                                    |                         |
| BT73                                                                                                      | <b>Dabrae Underpass Access</b>                                                                                                                                                                                                                                                                                                                                                   | B       |                                                                           | Design diversions                                                                                             | 8 weeks                          | 16 weeks                           | 8 weeks                 |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                        | Location and Description                                                                                                                                                                                       | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                               | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                            |                                                                                                                                                                                                                |         |                                                                           |                                                                                                                                             |                                  |                                    |                         |
| (BT Ref S2-12(R))<br><br>(Refer also to P246600/02/1/16227(S2) Rev A, 16228(S2) Rev A)<br><br>P246600/2700/B T/009 | <b>Road (excluding Underpass Structure)</b><br><br>Provide approx. 135m (to east of underpass) and approx. 290m (to west of underpass) and associated joint boxes, as indicated.<br><br>Draw-in copper cables. |         | Review diversion design.                                                  | Review diversion design.                                                                                                                    |                                  |                                    |                         |
|                                                                                                                    |                                                                                                                                                                                                                |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                            |                                  |                                    |                         |
|                                                                                                                    |                                                                                                                                                                                                                |         | Provide traffic management.                                               | Agree traffic management                                                                                                                    |                                  |                                    |                         |
|                                                                                                                    |                                                                                                                                                                                                                |         | Consult and comply with Statutory Undertaker's requirements.              | Install new duct, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                                                    |                                                                                                                                                                                                                |         |                                                                           | Inspect and supervise                                                                                                                       |                                  |                                    |                         |
|                                                                                                                    |                                                                                                                                                                                                                |         |                                                                           | Testing and commissioning.                                                                                                                  |                                  |                                    |                         |
| BT74<br>(BT Ref S2-13(R))                                                                                          | <b>Dambrae Underpass Structure (at approx. Ch. 2900)</b><br><br>Provide approx. 30m of 1 No.                                                                                                                   | B       |                                                                           | Design diversions                                                                                                                           | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                                    |                                                                                                                                                                                                                |         | Review diversion design.                                                  | Review diversion design.                                                                                                                    |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                 | Location and Description                                                                                                                                                                                           | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                     |                                                                                                                                                                                                                    |         |                                                                           |                                                                               |                                  |                                    |                         |
| (Refer also to P246600/02/1/16228(S2) Rev A)<br>P246600/2700/B T/009                        | HDPE duct in south verge.<br>Joints in duct to be taped to avoid concrete ingress.<br><br>Draw-in copper cables, from original ducts, as necessary.                                                                |         | Agree measures to safeguard existing apparatus with Statutory Undertaker  | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                                                             |                                                                                                                                                                                                                    |         | Provide traffic management.                                               | Agree traffic management.                                                     |                                  |                                    |                         |
|                                                                                             |                                                                                                                                                                                                                    |         | Consult and comply with Statutory Undertaker's requirements.              | Supply HDPE duct to Company.                                                  |                                  |                                    |                         |
|                                                                                             |                                                                                                                                                                                                                    |         | Install new duct in structure.                                            | Inspect and supervise                                                         |                                  |                                    |                         |
|                                                                                             |                                                                                                                                                                                                                    |         |                                                                           | Testing and commissioning.                                                    |                                  |                                    |                         |
| BT75<br>(BT Ref S2-14(A))<br><br>(Refer also to P246600/02/1/16230(S3) Rev A, 16231(S3) Rev | <b>Stoneyards Access Road (Temporary Diversion) &amp; Connections to Properties</b><br><br>Provide approx. 340m of 1 No. armoured temporary armoured cable over ground along site fence lines. Provide buried duct | B       |                                                                           | Design diversions                                                             | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                             |                                                                                                                                                                                                                    |         | Review diversion design.                                                  | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                                             |                                                                                                                                                                                                                    |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                              |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                         | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                           | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                              |                                                                                                                                                         |                                  |                                    |                         |
| A)<br><br>P246600/2700/B<br>T/010 & 011                     | at vehicle accesses. To run to existing pole at Stoneyards Cottage North & South. Provide underground spurs to Stoneyards Cottage and Stoneyards Farm including new pole (permanent). Re-run overhead line from Stoneyards Farm House to new pole.<br><br>Intercept and divert cables into temporary and permanent ducts as required.<br><br>Note – Existing overhead cable is on electricity poles (to be abandoned as part of SSE diversions). |         | Provide traffic management.                                  | Agree traffic management                                                                                                                                |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Consult and comply with Statutory Undertaker's requirements. | Install new cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Install new pole. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                              | Inspect and supervise.                                                                                                                                  |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                              | Testing and commissioning.                                                                                                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                              | Demolish original joint boxes which are still accessible. Recover copper cables from original ducts and overhead cables.                                |                                  |                                    |                         |
| BT76<br>(BT Ref S2-14(R))                                   | <b>Stoneyards Access Road</b><br><br>Provide approx. 325m of 1 No.                                                                                                                                                                                                                                                                                                                                                                               | B       |                                                              | Design diversions                                                                                                                                       | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Review diversion design.                                     | Review diversion design.                                                                                                                                |                                  |                                    |                         |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                     | Location and Description                                                                                                       | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                               | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                         |                                                                                                                                |         |                                                                           |                                                                                                                                             |                                  |                                    |                         |
| (Refer also to P246600/02/1/16230(S2) Rev A, 16231(S2) Rev A)<br><br>P246600/2700/B T/010 & 011 | 100mm PVC duct, and associated joint boxes, as indicated. Provide underground spurs to Stoneyards Cottage and Stoneyards Farm. |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                            |                                  |                                    |                         |
|                                                                                                 | Draw-in copper cables, from original ducts, as necessary.                                                                      |         | Provide traffic management.                                               | Agree traffic management.                                                                                                                   |                                  |                                    |                         |
|                                                                                                 |                                                                                                                                |         | Consult and comply with Statutory Undertaker's requirements.              | Install new duct, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                                 |                                                                                                                                |         | Recover temporary overground ducts                                        | Inspect and supervise                                                                                                                       |                                  |                                    |                         |
|                                                                                                 |                                                                                                                                |         |                                                                           | Testing and commissioning.                                                                                                                  |                                  |                                    |                         |
|                                                                                                 |                                                                                                                                |         |                                                                           | Demolish temporary joint boxes which are still accessible. Recover copper cables from original ducts.                                       |                                  |                                    |                         |
| BT77                                                                                            | <b>Proposed A90 footprint at Ch.</b>                                                                                           | B       |                                                                           | Design diversions                                                                                                                           | 8 weeks                          | 16 weeks                           | 8 weeks                 |



Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                       | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Group * | Main Works by Company                                                                                                                                                                                                                            | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                                                                                               | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                             |                                  |                                    |                         |
| (BT Ref S3-01(A))<br><br>(Refer also to P246600/02/1/16235(S3) Rev A)<br><br>P246600/2700/B T/012 | <p><b>4375 to Kirkhill Realignment (Temporary Diversion)</b></p> <p>Provide approx. 100m of 1 No. HDPE duct to extend, with associated joint boxes, as indicated. Duct to be laid a minimum of 300mm below proposed excavations. Duct to be bedded in and surrounded by a minimum of 75mm of sand. Take duct up to 600mm below surface at each end.</p> <p>Provide a new (temporary) pole to terminate existing overhead line to east of proposed A90. Provide 5m of 1 No. 100mm duct from pole to joint reference "144".</p> <p>Draw-in copper cables, from original ducts, as necessary.</p> |         | <p>Review diversion design.</p> <p>Agree measures to safeguard existing apparatus with Statutory Undertaker.</p> <p>Provide traffic management.</p> <p>Consult and comply with Statutory Undertaker's requirements.</p> <p>Install new duct.</p> | <p>Review diversion design.</p> <p>Procure apparatus for diversion.</p> <p>Agree traffic management.</p> <p>Supply HDPE duct to Company.</p> <p>Inspect and supervise.</p> <p>Install new pole and duct to existing joint box. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary.</p> <p>Testing and commissioning.</p> |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                               | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                       | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                   | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                |         |                                                                           |                                                                                                                                                                 |                                  |                                    |                         |
| BT78<br>(BT Ref S3-02(A))<br><br>(Refer also to P246600/02/1/16235(S3) Rev A)<br><br>P246600/2700/B T/012 | <b>Kirkhill Realignment (Temporary Diversion)</b><br><br>Provide approx. 120m of 1 No. temporary armoured cable (within duct) overground along site fence line. Bury in duct at vehicle accesses.<br><br>Provide approx. 6m of new 1 No. 100mm PVC duct to join new joint box to existing pole at Kirkhill Realignment tie-in (south).<br><br>Intercept and divert cables from original ducts and overhead cables as required. | B       |                                                                           | Design diversions                                                                                                                                               | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                |         | Review diversion design.                                                  | Review diversion design.                                                                                                                                        |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                                                |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                |         | Provide traffic management.                                               | Agree traffic management.                                                                                                                                       |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                |         | Consult and comply with Statutory Undertaker's requirements.              | Install new armoured cable and associated joint boxes. Install new duct. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
| Undertake any required protection works.                                                                  | Remove redundant poles and overhead cables. Recover copper cables from original ducts.                                                                                                                                                                                                                                                                                                                                         |         |                                                                           |                                                                                                                                                                 |                                  |                                    |                         |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                                     | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                             | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                                                                                                           | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|---------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                       |                                                                                                                                                                                                                                                                                                                                                                         |                                  |                                    |                         |
|                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                       | Testing and commissioning.                                                                                                                                                                                                                                                                                                                                              |                                  |                                    |                         |
| BT79<br>(BT Ref S3-03(R))<br><br>(Refer also to P246600/02/1/16235(S3) Rev A, 1606(S3) Rev A)<br><br>P246600/2700/B T/012 & 013 | <b>Kirkhill Realignment to A975 Realignment (including existing "Overhill" Access Road)</b><br><br>Provide approx. 1070m of 1 No. 100mm PVC duct, and associated joint boxes, as indicated to lie in west verge of the Kirkhill Realignment, the west verge of the existing "Overhill" Access Road and the north verge of the A975 Realignment (to the proposed Foveran Link Road).<br><br>Draw-in copper cables, from original ducts, as necessary. | B       |                       | Design diversions<br><br>Review diversion design.<br><br>Procure apparatus for diversion.<br><br>Agree traffic management.<br><br>Install new duct, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary.<br><br>Undertake any required protection works.<br><br>Recover temporary overground ducts | 8 weeks                          | 16 weeks                           | 8 weeks                 |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                           | Location and Description                                                                                                                                                                                                                                                        | Group * | Main Works by Company                                                                                                                                                                                                                                                                                               | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                                                                                    | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                               |                                                                                                                                                                                                                                                                                 |         |                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                  |                                  |                                    |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                 |         |                                                                                                                                                                                                                                                                                                                     | Testing and commissioning.                                                                                                                                                                                                                                                                                                                       |                                  |                                    |                         |
| BT80<br>(BT Ref S3-04(A))<br><br>(Refer also to P246600/02/1/16238(S3) Rev B)<br>P246600/2700/B T/014 | <p><b>Existing A90 at Rasheiereive (between tie-in to existing A90 and existing Joint Box Ref. 68)</b></p> <p>As required over approx. 70m slew and lower ducts in the verge of the existing A90 carriageway (to allow for its lowering to tie-in with the Realigned A975).</p> |         | <p>Accurately mark on site proposed changes to line and level of verge.</p> <p>Agree measures to safeguard existing apparatus with Statutory Undertaker.</p> <p>Provide traffic management.</p> <p>Consult and comply with Statutory Undertaker's requirements.</p> <p>Undertake any required protection works.</p> | <p>Review any proposed changes to line and level of verge: Assess extent of slewing and lowering required.</p> <p>Procure apparatus for diversion.</p> <p>Agree traffic management.</p> <p>As required slew and lower ducts. Joint boxes to be adjusted/rebuilt as necessary.</p> <p>Inspect and supervise</p> <p>Testing and commissioning.</p> |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                               | Location and Description                                                                                                                                                                                                                                                  | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                            | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                   |                                                                                                                                                                                                                                                                           |         |                                                                           |                                                                                                                                          |                                  |                                    |                         |
| BT81<br>(BT Ref S3-05(A))<br><br>(Refer also to P246600/02/1/16238(S3) Rev B)<br><br>P246600/2700/B T/014 | <b>Existing A90 at Rasheiereive (between existing A975 (Joint Box Ref. 23) and existing Joint Box Ref. 68)</b><br><br>Provide 1 No. 100mm PVC Duct over approx. 130m in the verge of the existing A90 and realigned (lowered) A90.<br><br>Draw in new cables in new duct. | B       |                                                                           | Design diversions                                                                                                                        | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                           |                                                                                                                                                                                                                                                                           |         | Review diversion design.                                                  | Review diversion design.                                                                                                                 |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                           |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                         |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                           |         | Provide traffic management.                                               | Agree traffic management.                                                                                                                |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                           |         | Consult and comply with Statutory Undertaker's requirements.              | Install new duct and draw in new cable.<br><br>Undertake jointing, reinstatement and connection works.<br>Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                           |         |                                                                           | Inspect and supervise                                                                                                                    |                                  |                                    |                         |
|                                                                                                           | Testing and commissioning.                                                                                                                                                                                                                                                |         |                                                                           |                                                                                                                                          |                                  |                                    |                         |
| BT82                                                                                                      | <b>Existing A90 at proposed A975</b>                                                                                                                                                                                                                                      | B       |                                                                           | Design diversions                                                                                                                        | 8 weeks                          | 16 weeks                           | 10 weeks                |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                       | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                                                              |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                                           |                                                                               |                                  |                                    |                                                                                                                                      |
| (BT Ref S3-06(A))<br><br>(Refer also to P246600/02/1/16238(S3) Rev B)<br><br>P246600/2700/B T/014 | <b>Realignment (between existing Joint Box Ref. 68 and existing Joint Box Ref. 69)(Temporary Diversion)</b><br><br>Provide approx. 25m of 3 No. HDPE ducts to extend under proposed A975 Realignment as indicated. Duct to be laid a minimum of 300mm below proposed excavations. Duct to be bedded in and surrounded by a minimum of 75mm of sand. Take duct up to 600mm below surface at each end.<br><br>Provide approx. 48m (to south of proposed A975) and approx. 65m (to north of proposed underpass) of 3 No. temporary ducts over ground, along site fence lines. Provide buried duct at vehicle accesses.<br><br>Draw in copper cables in new duct. Recover optic fibre cable from original ducts.<br><br>Provide optic fibre sub-duct and |         | Review diversion design.                                                  | Review diversion design.                                                      |                                  |                                    | (for installation and testing but NOT including fibre optic cable change over:- typically this is 30 days but can be up to 90 days). |
|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                              |                                  |                                    |                                                                                                                                      |
|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | Provide traffic management.                                               | Agree traffic management                                                      |                                  |                                    |                                                                                                                                      |
|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | Consult and comply with Statutory Undertaker's requirements.              | Supply HDPE duct to Company.                                                  |                                  |                                    |                                                                                                                                      |
|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | Install new HDPE duct under A975 Realignment.                             | Inspect and supervise.                                                        |                                  |                                    |                                                                                                                                      |
|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                                           | Install temporary over ground ducts (out with A975 Realignment).              |                                  |                                    |                                                                                                                                      |
|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                                           | Undertake jointing, reinstatement and connection Works.                       |                                  |                                    |                                                                                                                                      |
|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                                           | Testing and commissioning.                                                    |                                  |                                    |                                                                                                                                      |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                                                           | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Group * | Main Works by Company                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                                                                              |                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                          |                                                                               |                                  |                                    |                                                                                                                                                      |                                                                                                                                              |
|                                                                                                                                                       | cable between the existing joints.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |                                          | Recover cables from original ducts as possible.                               |                                  |                                    |                                                                                                                                                      |                                                                                                                                              |
| BT83<br>(BT Ref S3-07(R))<br><br>(Refer also to P246600/02/1/16238(S3) Rev B, 1606(S3) Rev A, 16241(S3) Rev A)<br><br>P246600/2700/B T/013, 014 & 015 | <b>Realigned A975 (from existing A90 at existing Joint Box Ref. 68) to Foveran Link Road tie-in to existing A90 (excluding Newburgh Road Underpass)</b><br><br>Provide a total of approx. 860m of 4 No. 100mm PVC ducts, and associated joint boxes. Consisting of approx. 69m along existing A90 to new joint box in north verge of Realigned A975, 218m to east and 28m to west of proposed Newburgh Road Underpass in north verge of proposed Realigned A975 and 545m in west verge of proposed Foveran Link Road.<br><br>Provide optic fibre sub-duct and cable between the existing joints. | B       |                                          | Design diversions                                                             | 8 weeks                          | 16 weeks                           | 12 weeks<br><br>(for installation and testing but NOT including fibre optic cable change over:- typically this is 30 days but can be up to 90 days). |                                                                                                                                              |
|                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                          | Review diversion design.                                                      |                                  |                                    |                                                                                                                                                      | Review diversion design.                                                                                                                     |
|                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                          | Agree measures to safeguard existing apparatus with Statutory Undertaker.     |                                  |                                    |                                                                                                                                                      | Procure apparatus for diversion.                                                                                                             |
|                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                          | Provide traffic management.                                                   |                                  |                                    |                                                                                                                                                      | Agree traffic management                                                                                                                     |
|                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                          | Consult and comply with Statutory Undertaker's requirements.                  |                                  |                                    |                                                                                                                                                      | Install new ducts, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |
|                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Undertake any required protection works. | Undertake any required protection works.                                      |                                  |                                    |                                                                                                                                                      |                                                                                                                                              |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                              | Location and Description                                                                                                                                               | Group * | Main Works by Company               | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |                                      |
|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|--------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                  |                                                                                                                                                                        |         |                                     |                                                                               |                                  |                                    |                         |                                      |
|                                                                                                          | Divert cables into permanent ducts as required.                                                                                                                        |         |                                     | Inspect and supervise                                                         |                                  |                                    |                         |                                      |
|                                                                                                          |                                                                                                                                                                        |         |                                     | Testing and commissioning.                                                    |                                  |                                    |                         |                                      |
|                                                                                                          |                                                                                                                                                                        |         |                                     | Recover copper cables. Recover optic fibre cables.                            |                                  |                                    |                         |                                      |
|                                                                                                          |                                                                                                                                                                        |         | Recover temporary overground ducts. | Demolish temporary joint boxes which are still accessible.                    |                                  |                                    |                         |                                      |
| BT84<br>(BT Ref S3-08(R))<br><br>(Refer also to P246600/02/1/1606(S3) Rev A)<br><br>P246600/2700/B T/013 | <b>Newburgh Road Underpass Structure</b><br><br>Provide approx. 50m of 4 No. HDPE duct in new structure.<br><br>Joints in ducts to be taped to avoid concrete ingress. | B       |                                     | Design diversions                                                             | 8 weeks                          | 16 weeks                           | 8 weeks                 |                                      |
|                                                                                                          |                                                                                                                                                                        |         |                                     | Review diversion design.                                                      |                                  |                                    |                         | Review diversion design.             |
|                                                                                                          |                                                                                                                                                                        |         |                                     |                                                                               |                                  |                                    |                         | Procure apparatus for diversion.     |
|                                                                                                          |                                                                                                                                                                        |         |                                     | Consult and comply with Statutory Undertaker's requirements.                  |                                  |                                    |                         | Supply HDPE duct to main contractor. |
|                                                                                                          |                                                                                                                                                                        |         |                                     | Install new duct within structure.                                            |                                  |                                    |                         | Inspect and supervise.               |



Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                       | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Group * | Main Works by Company                                                                                                                                                                                                                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                  | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                |                                  |                                    |                         |
|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Undertake any required protection works.                                                                                                                                                                                                                                               | Undertake jointing, reinstatement and connection works. Transfer cables, as necessary.                                                                                                                                                                         |                                  |                                    |                         |
|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                                                                                                                                                                                                                                        | Testing and commissioning.                                                                                                                                                                                                                                     |                                  |                                    |                         |
| BT85<br>(BT Ref S3-09(A))<br>(Refer also to P246600/02/1/16238(S3) Rev B)<br>P246600/2700/B T/014 | <p><b>Existing A975 (section retained (including length grubbed up and landscaped) as proposed access to Southlea)</b></p> <p>If required over approx. 85m slew and lower duct in the existing A975 (from existing joint box reference "9" to existing joint box (reference "120").</p> <p>Provide short length of new duct between existing joint box and existing pole (approx. opposite existing entrance to Southlea). If necessary relocate existing pole.</p> <p>Out of use ducts / joint boxes / poles and overhead cables in A975 to be abandoned / removed</p> | B       | <p>Accurately mark on site any proposed changes to line and level of existing carriageway.</p> <p>Agree measures to safeguard existing apparatus with Statutory Undertaker.</p> <p>Provide traffic management.</p> <p>Consult and comply with Statutory Undertaker's requirements.</p> | <p>Review any proposed changes to line and level of verge: Assess extent of slewing and lowering required.</p> <p>Agree traffic management</p> <p>As required slew and lower duct install duct to pole. . Joint boxes to be adjusted/rebuilt as necessary.</p> | 8 weeks                          | 16 weeks                           | 8 weeks                 |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br><br>Drawing Reference                                           | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Group * | Main Works by Company                                                                                                                                                                                                   | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                                         | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                       |                                  |                                    |                                                                                                                                                      |
|                                                                                                           | following completion of all permanent works.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         | Undertake any required protection works.                                                                                                                                                                                | Inspect and supervise                                                                                                                                                                                                                                                                                 |                                  |                                    |                                                                                                                                                      |
| BT86<br>(BT Ref S3-10(A))<br><br>(Refer also to P246600/02/1/16239(S3) Rev A)<br><br>P246600/2700/B T/014 | <p><b>Existing A975 (over extent of tie-in of proposed Realigned A975) (Temporary Diversion)</b></p> <p>Provide approx. 195m 2 No. temporary ducts overground along site fence line. Bury duct at vehicle accesses, and build joint boxes as indicated.</p> <p>Provide new pole (permanent) at tie-in with associated new distribution point to divert cable into temporary ducts.</p> <p>Provide optic fibre sub-duct and cable between the existing joints. Draw-in copper cables, from original ducts, as necessary.</p> | B       | <p>Review diversion design.</p> <p>Agree measures to safeguard existing apparatus with Statutory Undertaker.</p> <p>Provide traffic management.</p> <p>Consult and comply with Statutory Undertaker's requirements.</p> | <p>Design diversions</p> <p>Review diversion design.</p> <p>Procure apparatus for diversion.</p> <p>Agree traffic management</p> <p>Install new duct, cables and associated joint boxes. Provide new pole. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary.</p> | 8 weeks                          | 16 weeks                           | 10 weeks<br><br>(for installation and testing but NOT including fibre optic cable change over:- typically this is 30 days but can be up to 90 days). |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                          | Location and Description                                                                                                                                                                                                          | Group *                          | Main Works by Company                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                                               | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                              |                                                                                                                                                                                                                                   |                                  |                                          |                                                                                                                             |                                  |                                    |                                                                                                                                                      |
|                                                                                                                      | Divert cables into temporary and permanent ducts as required.                                                                                                                                                                     |                                  |                                          | Inspect and supervise                                                                                                       |                                  |                                    |                                                                                                                                                      |
|                                                                                                                      |                                                                                                                                                                                                                                   |                                  | Undertake any required protection works. | Undertake any required protection works.                                                                                    |                                  |                                    |                                                                                                                                                      |
|                                                                                                                      |                                                                                                                                                                                                                                   |                                  |                                          | Testing and commissioning.                                                                                                  |                                  |                                    |                                                                                                                                                      |
|                                                                                                                      |                                                                                                                                                                                                                                   |                                  |                                          | Recover optic fibre cables from original ducts, where possible. Demolish out-of-use joint boxes which are still accessible. |                                  |                                    |                                                                                                                                                      |
| BT87<br>(BT Ref S3-11(R))<br><br>(Refer also to P246600/02/1/16238(S3) Rev B, 16239(S3) Rev A)<br><br>P246600/2700/B | <b>Realigned A975 (from tie-in to existing A975) to existing A90</b><br><br>Provide approx. 480m of 2 No. 100mm PVC ducts, and associated joint boxes.<br><br>Provide optic fibre sub-duct and cable between the existing joints. | B                                |                                          | Design diversions                                                                                                           | 8 weeks                          | 16 weeks                           | 12 weeks<br><br>(for installation and testing but NOT including fibre optic cable change over:- typically this is 30 days but can be up to 90 days). |
|                                                                                                                      | Review diversion design.                                                                                                                                                                                                          | Review diversion design.         |                                          |                                                                                                                             |                                  |                                    |                                                                                                                                                      |
|                                                                                                                      | Agree measures to safeguard existing apparatus with Statutory Undertaker.                                                                                                                                                         | Procure apparatus for diversion. |                                          |                                                                                                                             |                                  |                                    |                                                                                                                                                      |
|                                                                                                                      | Provide traffic management.                                                                                                                                                                                                       | Agree traffic management         |                                          |                                                                                                                             |                                  |                                    |                                                                                                                                                      |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                              | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                     |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                       |         |                                                              |                                                                                                                                              |                                  |                                    |                                                             |
| T/014                                                       | Divert cables into permanent ducts as required.                                                                       |         | Consult and comply with Statutory Undertaker's requirements. | Install new ducts, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                                                             |
|                                                             |                                                                                                                       |         | Undertake any required protection works.                     | Undertake any required protection works.                                                                                                     |                                  |                                    |                                                             |
|                                                             |                                                                                                                       |         |                                                              | Inspect and supervise                                                                                                                        |                                  |                                    |                                                             |
|                                                             |                                                                                                                       |         |                                                              | Testing and commissioning.                                                                                                                   |                                  |                                    |                                                             |
|                                                             |                                                                                                                       |         |                                                              | Recover copper cables. Recover optic fibre cables.                                                                                           |                                  |                                    |                                                             |
|                                                             |                                                                                                                       |         | Recover temporary overground ducts.                          | Demolish temporary joint boxes which are still accessible.                                                                                   |                                  |                                    |                                                             |
| BT88<br>(BT Ref S3-12(A))                                   | <b>Existing A90 (from proposed A90 at approx. Ch. 5080 to northern tie-in with Foveran Link Road to existing A90)</b> | B       |                                                              | Design diversions                                                                                                                            | 8 weeks                          | 16 weeks                           | 10 weeks<br>(for installation and testing but NOT including |
|                                                             |                                                                                                                       |         | Review diversion design.                                     | Review diversion design.                                                                                                                     |                                  |                                    |                                                             |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                    | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                              |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|--------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                                           |                                                                               |                                  |                                    |                                                                                      |
| (Refer also to P246600/02/1/16241(S3) Rev A)<br><br>P246600/2700/B T/013 & 014 | <b>(Temporary Diversion)</b><br><br>Provide approx. 130m of 3 No. HDPE duct to extend, with associated joint boxes, as indicated below proposed A90 and proposed Foveran Link Road. Duct to be laid a minimum of 300mm below proposed excavations. Duct to be bedded in and surrounded by a minimum of 75mm of sand. Take duct up to 600mm below surface at each end.<br><br>Provide approx. 240m (to west of proposed Foveran Link Road) of 3 No. temporary ducts over ground, along site fence lines. Provide buried duct at vehicle accesses.<br><br>Draw in copper cables in new duct. Recover optic fibre cable from original ducts.<br><br>Provide optic fibre sub-duct and cable between the existing joints. |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                              |                                  |                                    | fibre optic cable change over:- typically this is 30 days but can be up to 90 days). |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | Provide traffic management.                                               | Agree traffic management                                                      |                                  |                                    |                                                                                      |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | Consult and comply with Statutory Undertaker's requirements.              | Supply HDPE duct to Company.                                                  |                                  |                                    |                                                                                      |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | Install new HDPE duct under proposed A90 and Foveran Link Road.           | Inspect and supervise.                                                        |                                  |                                    |                                                                                      |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                                           | Install temporary over ground ducts (to west of Foveran Link Road).           |                                  |                                    |                                                                                      |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                                           | Undertake jointing, reinstatement and connection Works.                       |                                  |                                    |                                                                                      |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                                           | Testing and commissioning.                                                    |                                  |                                    |                                                                                      |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                           | Location and Description                                                                                                                                                                                                                                                                                                                           | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                 | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                               |                                                                                                                                                                                                                                                                                                                                                    |         |                                                                           |                                                                                                               |                                  |                                    |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                    |         |                                                                           | Recover cables from original ducts as possible.                                                               |                                  |                                    |                         |
| BT89<br>(BT Ref S3-13(A))<br>(Refer also to P246600/02/1/16244(S3) Rev B)<br><br>P246600/2700/B T/016 | <b>Existing Mill of Foveran access road (proposed A90 footprint only at approx Ch. 6125)(Temporary Diversion)</b><br><br>Provide approx. 80m of 1 No. HDPE duct. Duct to be laid a minimum of 300mm below proposed excavations. Duct to be bedded in and surrounded by a minimum of 75mm of sand. Take duct up to 600mm below surface at each end. | B       |                                                                           | Design diversions                                                                                             | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                    |         | Review diversion design.                                                  | Review diversion design.                                                                                      |                                  |                                    |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                    |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                              |                                  |                                    |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                    |         | Provide traffic management.                                               | Agree traffic management                                                                                      |                                  |                                    |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                    |         | Consult and comply with Statutory Undertaker's requirements.              | Supply HDPE duct to Company.                                                                                  |                                  |                                    |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                    |         | Install new duct.                                                         | Inspect and supervise. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                               | Location and Description                                                                                                                                                                                                                                                                 | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                   |                                                                                                                                                                                                                                                                                          |         |                                                                           |                                                                                                                     |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                          |         |                                                                           | Testing and commissioning.                                                                                          |                                  |                                    |                         |
| BT90<br>(BT Ref S3-14(A))<br><br>(Refer also to P246600/02/1/16244(S3) Rev B)<br><br>P246600/2700/B T/016 | <b>Existing Mill of Foveran Access Road (to south of proposed Access Road) (Temporary Diversion)</b><br><br>Provide approx. 80m of 1 No. temporary duct overground, along site fence line. Bury duct at vehicle access.<br><br>Draw-in copper cables, from original ducts, as necessary. | B       |                                                                           | Design diversions                                                                                                   | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                           |                                                                                                                                                                                                                                                                                          |         | Review diversion design.                                                  | Review diversion design.                                                                                            |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                          |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                    |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                          |         | Provide traffic management.                                               | Agree traffic management                                                                                            |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                          |         | Consult and comply with Statutory Undertaker's requirements.              |                                                                                                                     |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                          |         | Undertake any required protection works.                                  | Install new duct and cables. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                               | Location and Description                                                                                                                                                                                                                                                                                           | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                        | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                   |                                                                                                                                                                                                                                                                                                                    |         |                                                                           |                                                                                                      |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                    |         |                                                                           | Testing and commissioning.                                                                           |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                    |         |                                                                           | Recover copper cables from original ducts. Demolish original joint boxes which are still accessible. |                                  |                                    |                         |
| BT91<br>(BT Ref S3-15(A))<br><br>(Refer also to P246600/02/1/16244(S3) Rev B)<br><br>P246600/2700/B T/016 | <b>Proposed Mill of Foveran access road (footprint only)(Temporary Diversion)</b><br><br>Provide approx. 20m of 1 No. HDPE duct. Duct to be laid a minimum of 300mm below proposed excavations. Duct to be bedded in and surrounded by a minimum of 75mm of sand. Take duct up to 600mm below surface at each end. | B       |                                                                           | Design diversions                                                                                    | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                    |         | Review diversion design.                                                  | Review diversion design.                                                                             |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                    |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                     |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                    |         | Provide traffic management.                                               | Agree traffic management                                                                             |                                  |                                    |                         |
|                                                                                                           |                                                                                                                                                                                                                                                                                                                    |         | Consult and comply with Statutory Undertaker's requirements.              | Supply HDPE duct to Company.                                                                         |                                  |                                    |                         |



## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                           | Location and Description                                                                                                                                                                                                                                                                                                                                                            | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                 | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                               |                                                                                                                                                                                                                                                                                                                                                                                     |         |                                                                           |                                                                                                               |                                  |                                    |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                     |         | Install new duct.                                                         | Inspect and supervise. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                     |         |                                                                           | Testing and commissioning.                                                                                    |                                  |                                    |                         |
| BT92<br>(BT Ref S3-16(A))<br>(Refer also to P246600/02/1/16244(S3) Rev B)<br><br>P246600/2700/B T/016 | <b>Existing Mill of Foveran Access Road (to north of proposed Access Road) (Temporary Diversion)</b><br><br>Provide approx. 60m of 1 No. temporary duct overground, along site fence line. Bury duct at vehicle access.<br><br>Terminate diversion at existing pole (Reference "17"). If required replace existing pole with new (permanent) pole and (if present) remove backstay. | B       |                                                                           | Design diversions                                                                                             | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                     |         | Review diversion design.                                                  | Review diversion design.                                                                                      |                                  |                                    |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                     |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                              |                                  |                                    |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                     |         | Provide traffic management.                                               | Agree traffic management                                                                                      |                                  |                                    |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                     |         | Consult and comply with Statutory Undertaker's requirements.              |                                                                                                               |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference               | Location and Description                                                                                                                                                                                                                    | Group * | Main Works by Company                                                                      | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                 | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                   |                                                                                                                                                                                                                                             |         |                                                                                            |                                                                                                                                               |                                  |                                    |                         |
|                                                                           | Draw-in copper cables, from original ducts, as necessary.                                                                                                                                                                                   |         | Undertake any required protection works.                                                   | Install new duct and cables. Install replacement pole. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                           |                                                                                                                                                                                                                                             |         |                                                                                            | Testing and commissioning.                                                                                                                    |                                  |                                    |                         |
|                                                                           |                                                                                                                                                                                                                                             |         |                                                                                            | Recover copper cables from original ducts. Demolish original joint boxes which are still accessible.                                          |                                  |                                    |                         |
| BT93<br>(BT Ref S3-17(A))<br>(Refer also to P246600/02/1/16244(S3) Rev B) | <b>Existing A90 east verge at Junction with proposed Foveran Overbridge Access Road (opposite Foveran School)</b><br><br>As required over approx. 40m slew and lower existing ducts in the verge of the existing A90 carriageway to achieve | B       | Accurately mark on site proposed changes to line and level of verge for proposed junction. | Review any proposed changes to line and level of verge: Assess extent of slewing and lowering required.                                       | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                           |                                                                                                                                                                                                                                             |         | Agree measures to safeguard existing apparatus with Statutory Undertaker.                  | If required, procure apparatus for diversion.                                                                                                 |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                         | Location and Description                                                                                                                                                                                                                                                                                                     | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                             |                                                                                                                                                                                                                                                                                                                              |         |                                                                           |                                                                               |                                  |                                    |                         |
| P246600/2700/B<br>T/016                                                                             | carriageway depth of cover for proposed access road.                                                                                                                                                                                                                                                                         |         | Provide traffic management.                                               | Agree traffic management                                                      |                                  |                                    |                         |
|                                                                                                     |                                                                                                                                                                                                                                                                                                                              |         | Consult and comply with Statutory Undertaker's requirements.              | As required slew and lower ducts.                                             |                                  |                                    |                         |
|                                                                                                     |                                                                                                                                                                                                                                                                                                                              |         | Undertake any required protection works.                                  | Inspect and supervise                                                         |                                  |                                    |                         |
|                                                                                                     |                                                                                                                                                                                                                                                                                                                              |         |                                                                           | Testing and commissioning.                                                    |                                  |                                    |                         |
| BT94<br>(BT Ref S3-18(R))<br><br>(Refer also to P246600/02/1/16244(S3) Rev B)<br><br>P246600/2700/B | <b>Proposed Foveran Overbridge Access Road (from existing A90 to Mill of Foveran)(Excluding Foveran Overbridge)</b><br><br>Provide approx. 95m (to west of proposed overbridge) and 120m (to east of overbridge) of 1 No. 100mm PVC duct, and associated joint boxes, as indicated to lie in the north verge of the proposed | B       |                                                                           | Design diversions                                                             | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                     |                                                                                                                                                                                                                                                                                                                              |         | Review diversion design.                                                  | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                                                     |                                                                                                                                                                                                                                                                                                                              |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                                                                     |                                                                                                                                                                                                                                                                                                                              |         | Provide traffic management.                                               | Agree traffic management                                                      |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                      | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                               | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                               |         |                                                              |                                                                                                                                             |                                  |                                    |                         |
| T/016                                                       | access road.<br><br>Draw-in copper cables, from original ducts, as necessary.                 |         | Consult and comply with Statutory Undertaker's requirements. | Install new duct, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                             |                                                                                               |         | Undertake any required protection works.                     | Undertake any required protection works.                                                                                                    |                                  |                                    |                         |
|                                                             |                                                                                               |         | Recover temporary overground ducts.                          | Inspect and supervise.                                                                                                                      |                                  |                                    |                         |
|                                                             |                                                                                               |         |                                                              | Testing and commissioning.                                                                                                                  |                                  |                                    |                         |
|                                                             |                                                                                               |         |                                                              | Demolish temporary joint boxes which are still accessible.                                                                                  |                                  |                                    |                         |
| BT95<br>(BT Ref S3-19(R))                                   | <b>Foveran Overbridge Structure (at approx. Ch. 6185)</b><br><br>Provide approx. 65m of 1 No. | B       |                                                              | Design diversions                                                                                                                           | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                             |                                                                                               |         | Review diversion design.                                     | Review diversion design.                                                                                                                    |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                         | Location and Description                                                                                                                                                                                                                                                                  | Group * | Main Works by Company                                                                | Works by Statutory Undertakers', Private Apparatus owners and others affected                                           | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                             |                                                                                                                                                                                                                                                                                           |         |                                                                                      |                                                                                                                         |                                  |                                    |                         |
| (Refer also to P246600/02/1/16244(S3) Rev B)<br><br>P246600/2700/B T/016                            | HDPE duct in north verge.<br>Joints in duct to be taped to avoid concrete ingress.<br><br>Draw-in copper cables, from original ducts, as necessary.                                                                                                                                       |         | Agree measures to safeguard existing apparatus with Statutory Undertaker.            | Procure apparatus for diversion.                                                                                        |                                  |                                    |                         |
|                                                                                                     |                                                                                                                                                                                                                                                                                           |         | Provide traffic management.                                                          | Agree traffic management                                                                                                |                                  |                                    |                         |
|                                                                                                     |                                                                                                                                                                                                                                                                                           |         | Consult and comply with Statutory Undertaker's requirements.                         | Supply HDPE duct to Company.                                                                                            |                                  |                                    |                         |
|                                                                                                     |                                                                                                                                                                                                                                                                                           |         | Install new duct in structure.                                                       | Inspect and supervise                                                                                                   |                                  |                                    |                         |
|                                                                                                     |                                                                                                                                                                                                                                                                                           |         |                                                                                      | Testing and commissioning.                                                                                              |                                  |                                    |                         |
| BT96<br>(BT Ref S3-20(A))<br><br>(Refer also to P246600/02/1/16244(S3) Rev B)<br><br>P246600/2700/B | <b>Foveran Overbridge Access Road (at east tie-in with existing road at Mill of Foveran)</b><br><br>If required over approx. 50m slew and lower existing duct in existing carriageway and / or existing verge to achieve appropriate depth of cover for realigned section of access road. | B       | Accurately mark on site proposed changes to line and level of carriageway and verge. | Review any proposed changes to line and level of carriageway and verge: Assess extent of slewing and lowering required. | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                     |                                                                                                                                                                                                                                                                                           |         | Agree measures to safeguard existing apparatus with Statutory Undertaker.            | If required, procure apparatus for diversion.                                                                           |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                          | Location and Description                                                                                                                                                                                                                                                                                                             | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                              |                                                                                                                                                                                                                                                                                                                                      |         |                                                                           |                                                                               |                                  |                                    |                                                                                                                                                      |
| T/016                                                                                                                |                                                                                                                                                                                                                                                                                                                                      |         | Provide traffic management.                                               | Agree traffic management                                                      |                                  |                                    |                                                                                                                                                      |
|                                                                                                                      |                                                                                                                                                                                                                                                                                                                                      |         | Consult and comply with Statutory Undertaker's requirements.              | If required slew and lower ducts.                                             |                                  |                                    |                                                                                                                                                      |
|                                                                                                                      |                                                                                                                                                                                                                                                                                                                                      |         | Undertake any required protection works.                                  | Inspect and supervise                                                         |                                  |                                    |                                                                                                                                                      |
|                                                                                                                      |                                                                                                                                                                                                                                                                                                                                      |         |                                                                           | Testing and commissioning.                                                    |                                  |                                    |                                                                                                                                                      |
| BT97<br>(BT Ref S3-21(A))<br><br>(Refer also to P246600/02/1/16251(S3) Rev A, 16253(S3) Rev A)<br><br>P246600/2700/B | <b>Tipperty Junction: A90 Realignment &amp; B9000 West Realignment (Temporary Diversion)</b><br><br>Provide approx. 525m 2 No. temporary 100mm ducts overground along site fence line. Bury duct at vehicle accesses, and build joint boxes as indicated.<br><br>Provide optic fibre sub-duct and cable between the existing joints. | B       |                                                                           | Design diversions                                                             | 8 weeks                          | 16 weeks                           | 10 weeks<br><br>(for installation and testing but NOT including fibre optic cable change over:- typically this is 30 days but can be up to 90 days). |
|                                                                                                                      |                                                                                                                                                                                                                                                                                                                                      |         | Review diversion design.                                                  | Review diversion design.                                                      |                                  |                                    |                                                                                                                                                      |
|                                                                                                                      |                                                                                                                                                                                                                                                                                                                                      |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                              |                                  |                                    |                                                                                                                                                      |
|                                                                                                                      |                                                                                                                                                                                                                                                                                                                                      |         | Provide traffic management.                                               | Agree traffic management                                                      |                                  |                                    |                                                                                                                                                      |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                          | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                 | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                     |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                   |         |                                                              |                                                                                                                                                               |                                  |                                    |                                                             |
| T/017 & 018                                                 | Draw-in copper cables, from original ducts, as necessary.<br>Divert cables into temporary and permanent ducts as required.        |         | Consult and comply with Statutory Undertaker's requirements. | Install new duct, cables and associated joint boxes. Provide new pole. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                                                             |
|                                                             |                                                                                                                                   |         |                                                              | Inspect and supervise                                                                                                                                         |                                  |                                    |                                                             |
|                                                             |                                                                                                                                   |         | Undertake any required protection works.                     | Undertake any required protection works.                                                                                                                      |                                  |                                    |                                                             |
|                                                             |                                                                                                                                   |         |                                                              | Testing and commissioning.                                                                                                                                    |                                  |                                    |                                                             |
|                                                             |                                                                                                                                   |         |                                                              | Recover optic fibre cables from original ducts, where possible. Demolish out-of-use joint boxes which are still accessible.                                   |                                  |                                    |                                                             |
| BT98<br>(BT Ref S3-22(R) & S4-05(R))                        | <b>Realigned A90 (to south Tipperty Junction) to tie-in to Existing A90 (south of Tipperty)</b><br>Provide approx. 1580m of 4 No. | B       |                                                              | Design diversions                                                                                                                                             | 8 weeks                          | 16 weeks                           | 12 weeks<br>(for installation and testing but NOT including |
|                                                             |                                                                                                                                   |         | Review diversion design.                                     | Review diversion design.                                                                                                                                      |                                  |                                    |                                                             |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                                                                              | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Group * | Main Works by Company                                                                                                                                                                                                            | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                                                                                                                                 | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|--------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                               |                                  |                                    |                                                                                      |
| (Refer also to P246600/02/1/16251(S3) Rev A, 16252(S3) Rev A, 16253(S4) Rev A, 16254(S4) Rev A, 16255(S4) Rev A, 16257(S4) Rev A)<br><br>P246600/2700/B T/017, 018 & 019 | 100mm PVC ducts, and associated joint boxes. Starting at existing joint box “453/454 JF11” and finishing at existing joint box “436/1417 JF11”.<br><br>Provide approx. 20m of 4 No. 100mm PVC temporary ducts to join new joint box with existing joint box ref. (MU6516JT) 92 (to west of Shell pipeline). (Note – these temporary ducts are to allow, if required, staged completion of this diversion).<br><br>Provide optic fibre sub-duct and cable between the existing joints.<br><br>Divert cables into permanent ducts as required. |         | Agree measures to safeguard existing apparatus with Statutory Undertaker.<br><br>Provide traffic management.<br><br>Consult and comply with Statutory Undertaker’s requirements.<br><br>Undertake any required protection works. | Procure apparatus for diversion.<br><br>Agree traffic management<br><br>Install new ducts, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary.<br><br>Undertake any required protection works.<br><br>Inspect and supervise<br><br>Testing and commissioning.<br><br>Recover copper cables. Recover optic fibre cables. |                                  |                                    | fibre optic cable change over:- typically this is 30 days but can be up to 90 days). |



## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                           | Location and Description                                                                                                                                                                                                                                                                                                                 | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                               | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                               |                                                                                                                                                                                                                                                                                                                                          |         |                                                                           |                                                                                                                                             |                                  |                                    |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                          |         | Recover temporary overground ducts.                                       | Demolish temporary joint boxes which are still accessible.                                                                                  |                                  |                                    |                         |
| BT99<br>(BT Ref S3-23(R))<br>(Refer also to P246600/02/1/16251(S3) Rev A)<br><br>P246600/2700/B T/018 | <b>Tipperty Junction: Roundabout to Underpass</b><br><br>Provide approx. 80m (to west of proposed underpass) of 1 No. 100mm PVC duct, and associated joint boxes, as indicated to lie in the north verge of the proposed road and crossing proposed NB merge slip road.<br><br>Draw-in copper cables, from original ducts, as necessary. | B       |                                                                           | Design diversions                                                                                                                           | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                          |         | Review diversion design.                                                  | Review diversion design.                                                                                                                    |                                  |                                    |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                          |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                            |                                  |                                    |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                          |         | Provide traffic management.                                               | Agree traffic management                                                                                                                    |                                  |                                    |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                          |         | Consult and comply with Statutory Undertaker's requirements.              | Install new duct, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                          |         | Undertake any required protection works.                                  | Undertake any required protection works.                                                                                                    |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                            | Location and Description                                                                                                                                                                                                                    | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                |                                                                                                                                                                                                                                             |         |                                                                           |                                                                               |                                  |                                    |                         |
|                                                                                                        |                                                                                                                                                                                                                                             |         | Recover temporary overground ducts.                                       | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                                                                        |                                                                                                                                                                                                                                             |         |                                                                           | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                                                                        |                                                                                                                                                                                                                                             |         |                                                                           | Demolish temporary joint boxes which are still accessible.                    |                                  |                                    |                         |
| BT100<br>(BT Ref S3-24(R))<br>(Refer also to P246600/02/1/16251(S3) Rev A)<br><br>P246600/2700/B T/018 | <b>Tipperty Underpass (at approx. Ch. 7640)</b><br><br>Provide approx. 50m of 1 No. HDPE duct in north verge.<br><br>Joints in duct to be taped to avoid concrete ingress.<br><br>Draw-in copper cables, from original ducts, as necessary. | B       |                                                                           | Design diversions                                                             | 8 weeks                          | 12 weeks                           | 8 weeks                 |
|                                                                                                        |                                                                                                                                                                                                                                             |         | Review diversion design.                                                  | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                                                        |                                                                                                                                                                                                                                             |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                                                                        |                                                                                                                                                                                                                                             |         | Provide traffic management.                                               | Agree traffic management                                                      |                                  |                                    |                         |
|                                                                                                        |                                                                                                                                                                                                                                             |         | Consult and comply with Statutory Undertaker's requirements.              | Supply HDPE duct to Company.                                                  |                                  |                                    |                         |
|                                                                                                        |                                                                                                                                                                                                                                             |         | Install new duct in structure.                                            | Inspect and supervise                                                         |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                                                                              |
|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                                                                           |                                                                                                                              |                                  |                                    |                                                                                                                                                      |
|                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                                                                           | Testing and commissioning.                                                                                                   |                                  |                                    |                                                                                                                                                      |
| BT101<br>(BT Ref S3-25(A))<br><br>(Refer also to P246600/02/1/16253(S3) Rev A)<br><br>P246600/2700/B T/018 | <b>Proposed B9000 West Realignment at approx. Ch. 330 (Temporary Diversion)</b><br><br>Provide approx. 110m of 1 No. HDPE duct. Diversion to start at existing joint box ref. 455/456 (6223JT) JF11 and run to temporary joint box to south of Fountainbleau (refere also to BT97).<br><br>Duct to be laid a minimum of 300mm below proposed excavations. Duct to be bedded in and surrounded by a minimum of 75mm of sand. Take duct up to 600mm below surface at each end.<br><br>Provide optic fibre sub-duct and cable between the existing joints.<br><br>Divert cables into permanent | B       |                                                                           | Design diversions                                                                                                            | 8 weeks                          | 16 weeks                           | 10 weeks<br><br>(for installation and testing but NOT including fibre optic cable change over:- typically this is 30 days but can be up to 90 days). |
|                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | Review diversion design.                                                  | Review diversion design.                                                                                                     |                                  |                                    |                                                                                                                                                      |
|                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                             |                                  |                                    |                                                                                                                                                      |
|                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | Provide traffic management.                                               | Agree traffic management                                                                                                     |                                  |                                    |                                                                                                                                                      |
|                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | Consult and comply with Statutory Undertaker's requirements.              | Supply HDPE duct to Company.                                                                                                 |                                  |                                    |                                                                                                                                                      |
|                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | Install new duct.                                                         | Inspect and supervise. Install cable, undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                                                                                                                                                      |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                         | Location and Description                                                                                                                                                                                                                                                                                                                                  | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                               | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                             |                                                                                                                                                                                                                                                                                                                                                           |         |                                                                           |                                                                                                                                             |                                  |                                    |                         |
|                                                                                                                     | ducts as required.                                                                                                                                                                                                                                                                                                                                        |         |                                                                           | Testing and commissioning.                                                                                                                  |                                  |                                    |                         |
| BT102<br>(BT Ref S4-01(R))<br>(Refer also to P246600/02/1/16249(S4) Rev A, 16250(S4) Rev A)<br>P246600/2700/B T/018 | <b>B9000 East Realignment (Tipperty Junction Underpass to existing B9000 tie-in at joint box ref. 228/227-104)</b><br>Provide approx. 440m (to east of proposed underpass) of 1 No. 100mm PVC duct, and associated joint boxes, as indicated to lie in the north verge of the proposed road.<br>Draw-in copper cables, from original ducts, as necessary. | B       |                                                                           | Design diversions                                                                                                                           | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                           |         | Review diversion design.                                                  | Review diversion design.                                                                                                                    |                                  |                                    |                         |
|                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                           |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                            |                                  |                                    |                         |
|                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                           |         | Provide traffic management.                                               | Agree traffic management                                                                                                                    |                                  |                                    |                         |
|                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                           |         | Consult and comply with Statutory Undertaker's requirements.              | Install new duct, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                           |         | Undertake any required protection works.                                  | Undertake any required protection works.                                                                                                    |                                  |                                    |                         |
|                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                           |         | Recover temporary overground ducts.                                       | Inspect and supervise.                                                                                                                      |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                            | Location and Description                                                                                                                                                                                                                                                                                                       | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                |                                                                                                                                                                                                                                                                                                                                |         |                                                                           |                                                                               |                                  |                                    |                         |
|                                                                                                        |                                                                                                                                                                                                                                                                                                                                |         |                                                                           | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                                                                        |                                                                                                                                                                                                                                                                                                                                |         |                                                                           | Demolish temporary joint boxes which are still accessible.                    |                                  |                                    |                         |
| BT103<br>(BT Ref S4-02(A))<br>(Refer also to P246600/02/1/16250(S4) Rev A)<br><br>P246600/2700/B T/018 | <b>Existing B9000 (between proposed B9000 West Realignment and Tarty Road Realignment (S)) (Temporary Diversion)</b><br><br>Provide approx. 210m of 1 No. temporary duct overground, along site fence line (between existing joint box ref. 227/226-28 and existing joint box ref. 228/227-104. Bury duct at vehicle accesses. | B       |                                                                           | Design diversions                                                             | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                        |                                                                                                                                                                                                                                                                                                                                |         | Review diversion design.                                                  | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                                                        |                                                                                                                                                                                                                                                                                                                                |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                                                                        |                                                                                                                                                                                                                                                                                                                                |         | Provide traffic management.                                               | Agree traffic management                                                      |                                  |                                    |                         |
|                                                                                                        |                                                                                                                                                                                                                                                                                                                                |         | Consult and comply with Statutory Undertaker's requirements.              |                                                                               |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                  | Location and Description                                                                                                                                                                                                                                                               | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                      |                                                                                                                                                                                                                                                                                        |         |                                                                           |                                                                                                                     |                                  |                                    |                         |
|                                                                                              | Draw-in copper cables, from original ducts, as necessary.                                                                                                                                                                                                                              |         | Undertake any required protection works.                                  | Install new duct and cables. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                              |                                                                                                                                                                                                                                                                                        |         |                                                                           | Testing and commissioning.                                                                                          |                                  |                                    |                         |
|                                                                                              |                                                                                                                                                                                                                                                                                        |         |                                                                           | Recover copper cables from original ducts.                                                                          |                                  |                                    |                         |
| BT104<br>(BT Ref S4-02(R))<br>(Refer also to P246600/02/1/16250(S4) Rev A)<br>P246600/2700/B | <b>Tarty Road Realignment (S)</b><br>Provide approx. 105m of 1 No. 100mm PVC duct, and associated joint box, as indicated to tie in to the existing joint box ref. 228/227-104 and the new joint box on the B9000 West Realignment, and to lie in the east verge of the proposed road. | B       |                                                                           | Design diversions                                                                                                   | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                              |                                                                                                                                                                                                                                                                                        |         | Review diversion design.                                                  | Review diversion design.                                                                                            |                                  |                                    |                         |
|                                                                                              |                                                                                                                                                                                                                                                                                        |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                    |                                  |                                    |                         |
|                                                                                              |                                                                                                                                                                                                                                                                                        |         | Provide traffic management.                                               | Agree traffic management                                                                                            |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                      | Location and Description                                                                                                                                                                                                                                    | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                               | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                          |                                                                                                                                                                                                                                                             |         |                                                                           |                                                                                                                                             |                                  |                                    |                         |
| T/018                                                                                                            | Draw-in copper cables, from original ducts, as necessary.                                                                                                                                                                                                   |         | Consult and comply with Statutory Undertaker's requirements.              | Install new duct, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                                                  |                                                                                                                                                                                                                                                             |         | Undertake any required protection works.                                  | Undertake any required protection works.                                                                                                    |                                  |                                    |                         |
|                                                                                                                  |                                                                                                                                                                                                                                                             |         | Recover temporary overground ducts.                                       | Inspect and supervise.                                                                                                                      |                                  |                                    |                         |
|                                                                                                                  |                                                                                                                                                                                                                                                             |         |                                                                           | Testing and commissioning.                                                                                                                  |                                  |                                    |                         |
| BT105<br>(BT Ref S4-03(A))<br><br>(Refer also to P246600/02/1/16252(S4) Rev A, 16253(S4) Rev A, 16254(S4) Rev A) | <b>Tarty Road Realignment (N) (Temporary Diversion)</b><br><br>Provide approx. 580m of 1 No. temporary duct overground, along site fence line (between existing joint box ref. 126 and new joint box on existing Tarty Road. Bury duct at vehicle accesses. | B       |                                                                           | Design diversions                                                                                                                           | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                                  |                                                                                                                                                                                                                                                             |         | Review diversion design.                                                  | Review diversion design.                                                                                                                    |                                  |                                    |                         |
|                                                                                                                  |                                                                                                                                                                                                                                                             |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                            |                                  |                                    |                         |
|                                                                                                                  |                                                                                                                                                                                                                                                             |         | Provide traffic management.                                               | Agree traffic management                                                                                                                    |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                  | Location and Description                                                                                                                                                                                                                         | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                      |                                                                                                                                                                                                                                                  |         |                                                                           |                                                                                                                     |                                  |                                    |                         |
| P246600/2700/B T/018 & 019                                                                                   | Draw-in copper cables, from original ducts, as necessary.                                                                                                                                                                                        |         | Consult and comply with Statutory Undertaker's requirements.              |                                                                                                                     |                                  |                                    |                         |
|                                                                                                              |                                                                                                                                                                                                                                                  |         | Undertake any required protection works.                                  | Install new duct and cables. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                                              |                                                                                                                                                                                                                                                  |         |                                                                           | Testing and commissioning.                                                                                          |                                  |                                    |                         |
|                                                                                                              |                                                                                                                                                                                                                                                  |         |                                                                           | Recover copper cables from original ducts.                                                                          |                                  |                                    |                         |
| BT106<br>(BT Ref S4-03(R))<br>(Refer also to P246600/02/1/16252(S4) Rev A, 16253(S4) Rev A, 16254(S4) Rev A) | <b>Tarty Road Realignment (N)</b><br><br>Provide approx. 580m of 1 No. 100mm PVC duct, and associated joint boxes, as indicated between existing joint box ref. 126 and new joint box on existing Tarty Road.<br><br>Draw-in copper cables, from | B       |                                                                           | Design diversions                                                                                                   | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                              |                                                                                                                                                                                                                                                  |         | Review diversion design.                                                  | Review diversion design.                                                                                            |                                  |                                    |                         |
|                                                                                                              |                                                                                                                                                                                                                                                  |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                    |                                  |                                    |                         |
|                                                                                                              |                                                                                                                                                                                                                                                  |         | Provide traffic management.                                               | Agree traffic management                                                                                            |                                  |                                    |                         |



Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                          | Location and Description                                                                                                                                                                                                                                                                                                                            | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                               | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                              |                                                                                                                                                                                                                                                                                                                                                     |         |                                                                           |                                                                                                                                             |                                  |                                    |                         |
| P246600/2700/B<br>T/018 & 019                                                                        | original ducts, as necessary.                                                                                                                                                                                                                                                                                                                       |         | Consult and comply with Statutory Undertaker's requirements.              | Install new duct, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                                                      |                                                                                                                                                                                                                                                                                                                                                     |         | Undertake any required protection works.                                  | Undertake any required protection works.                                                                                                    |                                  |                                    |                         |
|                                                                                                      |                                                                                                                                                                                                                                                                                                                                                     |         | Recover temporary overground ducts.                                       | Inspect and supervise.                                                                                                                      |                                  |                                    |                         |
|                                                                                                      |                                                                                                                                                                                                                                                                                                                                                     |         |                                                                           | Testing and commissioning.                                                                                                                  |                                  |                                    |                         |
| BT107<br>(BT Ref S4-04(A))<br><br>(Refer also to P246600/02/1/16253(S4) Rev A)<br><br>P246600/2700/B | <b>Proposed A90 at approx. Ch. 8130 (including Tarty Road (N) and B9000 West Realignment) at Fountainbleau</b><br><br>Provide approx. 115m of 2 No. HDPE duct. Diversion to start at new joint box ref. in east verge of Tarty Road (N) (refer to BT105 & BT106) and run to existing (northern) joint box (north of entrance to Fountainbleau) ref. | B       |                                                                           | Design diversions                                                                                                                           | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                                      |                                                                                                                                                                                                                                                                                                                                                     |         | Review diversion design.                                                  | Review diversion design.                                                                                                                    |                                  |                                    |                         |
|                                                                                                      |                                                                                                                                                                                                                                                                                                                                                     |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                            |                                  |                                    |                         |
|                                                                                                      |                                                                                                                                                                                                                                                                                                                                                     |         | Provide traffic management.                                               | Agree traffic management                                                                                                                    |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                          | Location and Description                                                                                                                                                                                                                                                                                                                       | Group * | Main Works by Company                                                              | Works by Statutory Undertakers', Private Apparatus owners and others affected                                 | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                                                                              |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                              |                                                                                                                                                                                                                                                                                                                                                |         |                                                                                    |                                                                                                               |                                  |                                    |                                                                                                                                                      |
| T/018                                                                                                | 89.<br>Duct to be laid a minimum of 300mm below proposed excavations. Duct to be bedded in and surrounded by a minimum of 75mm of sand. Take duct up to 600mm below surface at each end.                                                                                                                                                       |         | Consult and comply with Statutory Undertaker's requirements.                       | Supply HDPE duct to Company.                                                                                  |                                  |                                    |                                                                                                                                                      |
|                                                                                                      |                                                                                                                                                                                                                                                                                                                                                |         | Install new ducts (2 No.)(across new and existing A90 and B9000 West Realignment). | Inspect and supervise. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                                                                                                                                                      |
|                                                                                                      |                                                                                                                                                                                                                                                                                                                                                |         |                                                                                    | Testing and commissioning.                                                                                    |                                  |                                    |                                                                                                                                                      |
| BT108<br>(BT Ref S4-06(A))<br><br>(Refer also to P246600/02/1/16253(S4) Rev A)<br><br>P246600/2700/B | <b>B9000 West Realignment to south of Fountainbleau (Temporary Works)</b><br><br>Provide approx. 85m of 1 No. temporary duct, and associated joint boxes to run from temporary joint box (refer also to BT97 & BT101) and existing joint box just to north of entrance to Fountainbleau. Duct to run along site fence lines. Bury duct at road | B       |                                                                                    | Design diversions                                                                                             | 8 weeks                          | 16 weeks                           | 10 weeks<br><br>(for installation and testing but NOT including fibre optic cable change over:- typically this is 30 days but can be up to 90 days). |
|                                                                                                      |                                                                                                                                                                                                                                                                                                                                                |         | Review diversion design.                                                           | Review diversion design.                                                                                      |                                  |                                    |                                                                                                                                                      |
|                                                                                                      |                                                                                                                                                                                                                                                                                                                                                |         | Agree measures to safeguard existing apparatus with Statutory Undertaker.          | Procure apparatus for diversion.                                                                              |                                  |                                    |                                                                                                                                                      |
|                                                                                                      |                                                                                                                                                                                                                                                                                                                                                |         | Provide traffic management.                                                        | Agree traffic management                                                                                      |                                  |                                    |                                                                                                                                                      |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                  | Location and Description                                                                                                                                                                                                                      | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                                                   |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                      |                                                                                                                                                                                                                                               |         |                                                                           |                                                                                                                                              |                                  |                                    |                                                                                                                           |
| T/018                                                                                        | crossings.<br><br>Provide optic fibre sub-duct and cable between the existing joints.<br><br>Divert cables into temporary ducts as required.                                                                                                  |         | Consult and comply with Statutory Undertaker's requirements.              | Install new ducts, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                                                                                                                           |
|                                                                                              |                                                                                                                                                                                                                                               |         | Undertake any required protection works.                                  | Undertake any required protection works.                                                                                                     |                                  |                                    |                                                                                                                           |
|                                                                                              |                                                                                                                                                                                                                                               |         |                                                                           | Testing and commissioning.                                                                                                                   |                                  |                                    |                                                                                                                           |
|                                                                                              |                                                                                                                                                                                                                                               |         |                                                                           | Recover copper cables. Recover optic fibre cables.                                                                                           |                                  |                                    |                                                                                                                           |
| BT109<br>(BT Ref S4-07(A))<br><br>(Refer also to P246600/02/1/16253(S4) Rev A, 16254(S4) Rev | <b>B9000 West Realignment to north of Fountainbleau (Temporary Works)</b><br><br>Provide approx. 180m of 2 No. temporary duct, and associated joint boxes to run from existing (northern) joint box (north of entrance to Fountainbleau) ref. | B       |                                                                           | Design diversions                                                                                                                            | 8 weeks                          | 16 weeks                           | 12 weeks<br><br>(for installation and testing but NOT including fibre optic cable change over:- typically this is 30 days |
|                                                                                              |                                                                                                                                                                                                                                               |         | Review diversion design.                                                  | Review diversion design.                                                                                                                     |                                  |                                    |                                                                                                                           |
|                                                                                              |                                                                                                                                                                                                                                               |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                                                                                             |                                  |                                    |                                                                                                                           |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**    |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|----------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                                                                                                                                                                                                                                                         |         |                                                              |                                                                                                                                              |                                  |                                    |                            |
| A)<br><br>P246600/2700/B<br>T/018                           | 89to existing joint box ref. 90.<br>Where possible ducts to run along site fence lines. Bury ducts at road crossings.<br><br>Provide optic fibre sub-duct and cable between the existing joints.<br><br>Divert cables into temporary ducts as required. |         | Provide traffic management.                                  | Agree traffic management                                                                                                                     |                                  |                                    | but can be up to 90 days). |
|                                                             |                                                                                                                                                                                                                                                         |         | Consult and comply with Statutory Undertaker's requirements. | Install new ducts, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                            |
|                                                             |                                                                                                                                                                                                                                                         |         | Undertake any required protection works.                     | Undertake any required protection works.                                                                                                     |                                  |                                    |                            |
|                                                             |                                                                                                                                                                                                                                                         |         |                                                              | Testing and commissioning.                                                                                                                   |                                  |                                    |                            |
|                                                             |                                                                                                                                                                                                                                                         |         |                                                              | Recover copper cables. Recover optic fibre cables.                                                                                           |                                  |                                    |                            |
| BT110<br>(BT Ref S4-08(R))                                  | <b>B9000 West Realignment from north of Fountainbleau to tie-in with existing B9000</b><br><br>Provide approx. 460m of 1 No.                                                                                                                            | B       |                                                              | Design diversions                                                                                                                            | 8 weeks                          | 16 weeks                           | 8 weeks                    |
|                                                             |                                                                                                                                                                                                                                                         |         | Review diversion design.                                     | Review diversion design.                                                                                                                     |                                  |                                    |                            |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                     | Location and Description                                                                                                                                                                         | Group * | Main Works by Company                                                                                                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                         |                                                                                                                                                                                                  |         |                                                                                                                                             |                                                                               |                                  |                                    |                         |
| (Refer also to P246600/02/1/16253(S4) Rev A, 16254(S4) Rev A)<br><br>P246600/2700/B T/018 & 019 | 100mm PVC duct (in east verge), and associated joint boxes, as indicated between (northern) joint box (north of entrance to Fountainbleau) ref. 89 to new joint box at tie-in to existing B9000. |         | Agree measures to safeguard existing apparatus with Statutory Undertaker.                                                                   | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                                                                 | Draw-in copper cables, from original ducts, as necessary.                                                                                                                                        |         | Provide traffic management.                                                                                                                 | Agree traffic management                                                      |                                  |                                    |                         |
|                                                                                                 | Consult and comply with Statutory Undertaker's requirements.                                                                                                                                     |         | Install new duct, cables and associated joint boxes. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                                                               |                                  |                                    |                         |
|                                                                                                 | Undertake any required protection works.                                                                                                                                                         |         | Undertake any required protection works.                                                                                                    |                                                                               |                                  |                                    |                         |
|                                                                                                 | Recover temporary overground ducts.                                                                                                                                                              |         | Inspect and supervise.                                                                                                                      |                                                                               |                                  |                                    |                         |
|                                                                                                 |                                                                                                                                                                                                  |         | Testing and commissioning.                                                                                                                  |                                                                               |                                  |                                    |                         |
| BT111<br>(BT Ref S4-09(A))                                                                      | <b>B9000 West Realignment (at north tie-in)(Temporary Diversion)</b>                                                                                                                             | B       |                                                                                                                                             | Design diversions                                                             | 8 weeks                          | 16 weeks                           | 8 weeks                 |
| Review diversion design.                                                                        | Review diversion design.                                                                                                                                                                         |         |                                                                                                                                             |                                                                               |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference              | Location and Description                                                                                                                                                                                                              | Group * | Main Works by Company                                                                      | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                   | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                  |                                                                                                                                                                                                                                       |         |                                                                                            |                                                                                                                                                                 |                                  |                                    |                         |
| (Refer also to P246600/02/1/16254(S4) Rev A)<br><br>P246600/2700/B T/019 | Provide approx. 110m of 1 No. temporary armoured cable overground along site fence line. Bury in duct at vehicle accesses and B9000 crossing.<br><br>Intercept and Divert cables from original ducts and overhead cables as required. |         | Agree measures to safeguard existing apparatus with Statutory Undertaker.                  | Procure apparatus for diversion.                                                                                                                                |                                  |                                    |                         |
|                                                                          |                                                                                                                                                                                                                                       |         | Provide traffic management.                                                                | Agree traffic management                                                                                                                                        |                                  |                                    |                         |
|                                                                          |                                                                                                                                                                                                                                       |         | Consult and comply with Statutory Undertaker's requirements.                               | Install new armoured cable and associated joint boxes. Install new duct. Undertake jointing, reinstatement and connection works. Transfer cables, as necessary. |                                  |                                    |                         |
|                                                                          |                                                                                                                                                                                                                                       |         | Undertake any required protection works.                                                   | Recover copper cables from original ducts.                                                                                                                      |                                  |                                    |                         |
|                                                                          |                                                                                                                                                                                                                                       |         |                                                                                            | Testing and commissioning.                                                                                                                                      |                                  |                                    |                         |
| BT112<br>(BT Ref S4-10(A))<br>(Refer also to                             | <b>Existing B9000 east verge at Junction with proposed Bridgend Access Road</b><br><br>As required over approx. 25m slew and lower existing duct in the                                                                               | B       | Accurately mark on site proposed changes to line and level of verge for proposed junction. | Review any proposed changes to line and level of verge: Assess extent of slewing and lowering required.                                                         | 8 weeks                          | 16 weeks                           | 8 weeks                 |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                    | Location and Description                                                                                                                                                                                                                     | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                        |                                                                                                                                                                                                                                              |         |                                                                           |                                                                               |                                  |                                    |                         |
| P246600/02/1/16256 Rev A)<br><br>P246600/2700/B T/019                          | verge of the existing B9000 carriageway to achieve carriageway depth of cover for proposed access road.                                                                                                                                      |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | If required, procure apparatus for diversion.                                 |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                              |         | Provide traffic management.                                               | Agree traffic management                                                      |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                              |         | Consult and comply with Statutory Undertaker's requirements.              | As required slew and lower ducts.                                             |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                              |         | Undertake any required protection works.                                  | Inspect and supervise                                                         |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                              |         |                                                                           | Testing and commissioning.                                                    |                                  |                                    |                         |
| BT113<br>(BT Ref S4-11(A))<br><br>(Refer also to P246600/02/1/16256(S4) Rev A) | <b>Existing B9000 opposite "Hillview" (south of proposed Bridgend Access Road)</b><br><br>Provide new pole at back of widened verge of the existing B9000. Bury cable from joint at base of existing pole to new pole and provide new cables | B       |                                                                           | Design diversions                                                             | 8 weeks                          | 16 weeks                           | 8 weeks                 |
|                                                                                |                                                                                                                                                                                                                                              |         | Review diversion design.                                                  | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                              |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. | Procure apparatus for diversion.                                              |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                   | Location and Description                                                                                                                                                                                                                                   | Group * | Main Works by Company                                                               | Works by Statutory Undertakers', Private Apparatus owners and others affected                                   | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                                                                       |                                                                                                                                                                                                                                                            |         |                                                                                     |                                                                                                                 |                                  |                                    |                         |
| P246600/2700/B<br>T/019                                                                                       | (underground / overground as required).                                                                                                                                                                                                                    |         | Provide traffic management.                                                         | Agree traffic management                                                                                        |                                  |                                    |                         |
|                                                                                                               |                                                                                                                                                                                                                                                            |         | Consult and comply with Statutory Undertaker's requirements.                        | Install new pole. Bury cable from existing joint at base of existing pole to new pole. Erect new overhead line. |                                  |                                    |                         |
|                                                                                                               |                                                                                                                                                                                                                                                            |         | Undertake any required protection works.                                            | Transfer circuit. Testing and commissioning. Recover existing pole.                                             |                                  |                                    |                         |
| BT114<br>(BT Ref S4-12(A))<br><br>(Refer also to P246600/02/1/16257(S4) Rev A)<br><br>P246600/2700/B<br>T/019 | <b>Proposed Bridgend Access Road (at tie-in to existing road at Bridgend)</b><br><br>If required over approx. 12m slew and lower existing ducted crossing of existing Bridgend Access Road to achieve carriageway depth of cover for proposed access road. | B       | Accurately mark on site proposed changes to line and level of proposed access road. | Review any proposed changes to line and level of carriageway: Assess extent of slewing and lowering required.   | 8 weeks                          | 16 weeks                           | 2 weeks                 |
|                                                                                                               |                                                                                                                                                                                                                                                            |         | Agree measures to safeguard existing apparatus with Statutory Undertaker.           | If required, procure apparatus for diversion.                                                                   |                                  |                                    |                         |
|                                                                                                               |                                                                                                                                                                                                                                                            |         | Provide traffic management.                                                         | Agree traffic management                                                                                        |                                  |                                    |                         |



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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|---------|--------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>British Telecom – Openreach (BT)</b>                     |                          |         |                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                          |         | Consult and comply with Statutory Undertaker's requirements. | As required slew and lower ducts.                                             |                                  |                                    |                         |
|                                                             |                          |         | Undertake any required protection works.                     | Inspect and supervise                                                         |                                  |                                    |                         |
|                                                             |                          |         |                                                              | Testing and commissioning.                                                    |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                           | Group * | Main Works by Company                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                           |
|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|---------------------------------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                                                             |                                                                               |                                  |                                    |                                                   |
| CWW01<br><br>(CWW Conflict ref RC00276/1 & 2, Stonehaven)<br><br>Drg B1033200/CD/2700/CWW/001, 056 and 057 | <b>Stonehaven Junction</b><br><br>In advance of main works at A90 underbridge install new 2 No. 90mm UPVC ducts and associated joint boxes (including demolition of existing footway chambers and replacement with carriageway chambers where required) across existing A90 carriageway at approx. chainages 0+380 and 0+660 to facilitate temporary diversion of CWW "Blue Network" trunk cable.<br><br>Provide 1 No. new 90mm UPVC single bore duct within north | B       |                                                             | Design Diversions.                                                            | 4 weeks                          | 4 weeks                            | 20 Weeks<br><br>Includes notice period for outage |
|                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Review diversion design.                                    | Review diversion design.                                                      |                                  |                                    |                                                   |
|                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                                                             | Procure apparatus for diversion.                                              |                                  |                                    |                                                   |
|                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Provide traffic management.                                 | Agree traffic management                                                      |                                  |                                    |                                                   |
|                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Consult and comply with Statutory Undertaker's requirements | Install new ducts and chambers.                                               |                                  |                                    |                                                   |
|                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Undertake any required protection works.                    | Inspect and supervise.                                                        |                                  |                                    |                                                   |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Group * | Main Works by Company                | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                     | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |                                      |                                                                                                                                   |                                  |                                    |                         |
|                                                             | verge of structure.<br>Demolish existing footway chambers and replace with carriageway chambers on A90 southbound carriageway verge at approx. chainage 0+390 and in west verge of B979 Netherley Road south of A90 underbridge.<br>Excavate existing 2 x 89mm PVC cabled ducts in A90 southbound carriageway verges and slew and lower to suit FRL's of Stonehaven Southbound Diverge and Merge Slip Roads.<br>Demolish existing chamber and split duct cables in A90 southbound verge at approx. chainage 1+600.<br>Divert cables into temporary and permanent ducts as required. |         | Install new ducts in structures      |                                                                                                                                   |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         | Recover or demolish redundant ducts. | Install new cables. Undertake jointing, reinstatement and connection works. Demolish redundant chambers. Recover redundant cable. |                                  |                                    |                         |
| CWW02<br>(CWW Conflict ref RC00276/18)<br>Drg B1033200/CD/  | <b>U90C Tulloch Road, Ashtown Overbridge</b><br>In advance of main works build interception joint boxes as required at both tie-ins of                                                                                                                                                                                                                                                                                                                                                                                                                                              | B       |                                      | Design Diversions.                                                                                                                | 4 weeks                          | 4 weeks                            | 20 weeks                |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         | Review diversion design.             | Review diversion design.                                                                                                          |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |                                      | Procure apparatus for diversion.                                                                                                  |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                  | Group * | Main Works by Company                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                     | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>  |                                                                                                                                                                                                                                                                                                                                                                           |         |                                                             |                                                                                                                                   |                                  |                                    |                         |
| 2700/CWW/031                                                | <p>proposed works to existing carriageway and install 1 No. temporary 90mm diameter UPVC duct clear of proposed works.</p> <p>Install new 1 No. 90mm UPVC duct and associated joint boxes in north verge of U90C.</p> <p>Provide new single bore 90mm UPVC duct within north verge of structure.</p> <p>Divert cables into temporary and permanent ducts as required.</p> |         | Provide traffic management.                                 | Agree traffic management                                                                                                          |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                           |         | Consult and comply with Statutory Undertaker's requirements | Install new ducts and chambers.                                                                                                   |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                           |         | Undertake any required protection works.                    | Inspect and supervise.                                                                                                            |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                           |         | Install new ducts in structures                             |                                                                                                                                   |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                           |         | Recover or demolish redundant ducts.                        | Install new cables. Undertake jointing, reinstatement and connection works. Demolish redundant chambers. Recover redundant cable. |                                  |                                    |                         |
| CWW03<br>(CWW Conflict ref RC00276/17)                      | <b>A96 Aberdeen to Inverness Road</b><br>Excavate existing 2 x 89mm PVC cabled ducts in south verge of                                                                                                                                                                                                                                                                    |         |                                                             | Design Diversions.                                                                                                                | 2 weeks                          | 8 weeks                            | 1 week                  |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                           |         | Review diversion design.                                    | Review diversion design.                                                                                                          |                                  |                                    |                         |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                  | Group * | Main Works by Company                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                     | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>  |                                                                                                                           |         |                                                             |                                                                                                                                   |                                  |                                    |                         |
| Drg B1033200/CD/2700/CWW/033                                | A96 carriageway verge and slew and lower to suit A96 Underbridge structure.                                               |         |                                                             | Procure apparatus for diversion.                                                                                                  |                                  |                                    |                         |
|                                                             |                                                                                                                           |         | Provide traffic management.                                 | Agree traffic management                                                                                                          |                                  |                                    |                         |
|                                                             |                                                                                                                           |         | Consult and comply with Statutory Undertaker's requirements | Install new ducts and chambers.                                                                                                   |                                  |                                    |                         |
|                                                             |                                                                                                                           |         | Undertake any required protection works.                    | Inspect and supervise.                                                                                                            |                                  |                                    |                         |
|                                                             |                                                                                                                           |         | Recover or demolish redundant ducts.                        | Install new cables. Undertake jointing, reinstatement and connection works. Demolish redundant chambers. Recover redundant cable. |                                  |                                    |                         |
| CWW04<br>(CWW Conflict ref RC00276/16)                      | <b>Craibstone Junction</b><br>Install new 2 x 90mm UPVC ducts and associated joint boxes in south verge of New Craibstone | B       |                                                             | Design Diversions.                                                                                                                | 4 weeks                          | 4 weeks                            | 20 weeks                |
|                                                             |                                                                                                                           |         | Review diversion design.                                    | Review diversion design.                                                                                                          |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference            | Location and Description                                                                                                                                                      | Group * | Main Works by Company                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                     | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>             |                                                                                                                                                                               |         |                                                             |                                                                                                                                   |                                  |                                    |                         |
| Drg<br>B1033200/CD/<br>2700/CWW/070                                    | Roundabout.<br>Divert cables into temporary and permanent ducts as required.                                                                                                  |         |                                                             | Procure apparatus for diversion.                                                                                                  |                                  |                                    |                         |
|                                                                        |                                                                                                                                                                               |         | Provide traffic management.                                 | Agree traffic management                                                                                                          |                                  |                                    |                         |
|                                                                        |                                                                                                                                                                               |         | Consult and comply with Statutory Undertaker's requirements | Install new ducts and chambers.                                                                                                   |                                  |                                    |                         |
|                                                                        |                                                                                                                                                                               |         | Undertake any required protection works.                    | Inspect and supervise.                                                                                                            |                                  |                                    |                         |
|                                                                        |                                                                                                                                                                               |         | Recover or demolish redundant ducts.                        | Install new cables. Undertake jointing, reinstatement and connection works. Demolish redundant chambers. Recover redundant cable. |                                  |                                    |                         |
| CWW05<br>(CWW Conflict ref N/A)<br>Drg<br>B1033200/CD/<br>2700/CWW/071 | <b>Dyce Drive / A96 Junction</b><br>Excavate existing 2 x 89mm PVC cabled ducts in Dyce Drive west verge and slew and lower to suit FRL's<br>Divert cables into temporary and | B       |                                                             | Design Diversions.                                                                                                                | 4 Weeks                          | 4 Weeks                            | 8 Weeks                 |
|                                                                        |                                                                                                                                                                               |         | Review diversion design.                                    | Review diversion design.                                                                                                          |                                  |                                    |                         |
|                                                                        |                                                                                                                                                                               |         |                                                             | Procure apparatus for diversion.                                                                                                  |                                  |                                    |                         |
|                                                                        |                                                                                                                                                                               |         | Provide traffic management.                                 | Agree traffic management                                                                                                          |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                       | Location and Description                                                                                                                                                                                                            | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                     | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>                        |                                                                                                                                                                                                                                     |         |                                                                          |                                                                                                                                   |                                  |                                    |                         |
|                                                                                   | permanent ducts as required.<br>No diversion work currently anticipated to existing cables in existing verges of A96 Aberdeen to Inverness Road                                                                                     |         | Consult and comply with CWW regarding diversion requirements.            |                                                                                                                                   |                                  |                                    |                         |
|                                                                                   |                                                                                                                                                                                                                                     |         | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                                                   |                                  |                                    |                         |
|                                                                                   |                                                                                                                                                                                                                                     |         | Undertake any required temporary protection works.                       | Inspect and supervise.                                                                                                            |                                  |                                    |                         |
|                                                                                   |                                                                                                                                                                                                                                     |         | Recover or demolish redundant ducts.                                     | Install new cables. Undertake jointing, reinstatement and connection works. Demolish redundant chambers. Recover redundant cable. |                                  |                                    |                         |
| CWW06<br>(CWW Conflict ref RC00276/13, 14 and 15)<br>Drg B1033200/CD/2700/CWW/053 | <b>Blackdog Junction</b><br>Excavate existing 89mm PVC cabled duct in A90 northbound carriageway verge and slew and lower to suit FRL's of Blackdog Junction Northbound Diverge and Merge Slip Roads.<br>Excavate existing 89mm PVC | B       |                                                                          | Design Diversions.                                                                                                                | 2 weeks                          | 8 weeks                            | 1 week                  |
|                                                                                   |                                                                                                                                                                                                                                     |         | Review diversion design.                                                 | Review diversion design.                                                                                                          |                                  |                                    |                         |
|                                                                                   |                                                                                                                                                                                                                                     |         |                                                                          | Procure apparatus for diversion.                                                                                                  |                                  |                                    |                         |
|                                                                                   |                                                                                                                                                                                                                                     |         | Provide traffic management.                                              | Agree traffic management                                                                                                          |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                              | Location and Description                                                                                                                                                                                                                                                                                                                                      | Group * | Main Works by Company                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                     | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>                                               |                                                                                                                                                                                                                                                                                                                                                               |         |                                                             |                                                                                                                                   |                                  |                                    |                         |
| to 055 inclusive                                                                                         | cabled duct in A90 northbound carriageway verge and slew and/or lower (if required) to suit substructure of Blackdog Junction North and South Overbridges.                                                                                                                                                                                                    |         | Consult and comply with Statutory Undertaker's requirements | Install new ducts and chambers.                                                                                                   |                                  |                                    |                         |
|                                                                                                          |                                                                                                                                                                                                                                                                                                                                                               |         | Undertake any required protection works.                    | Inspect and supervise.                                                                                                            |                                  |                                    |                         |
|                                                                                                          |                                                                                                                                                                                                                                                                                                                                                               |         | Recover or demolish redundant ducts.                        | Install new cables. Undertake jointing, reinstatement and connection works. Demolish redundant chambers. Recover redundant cable. |                                  |                                    |                         |
| CWW07<br>(CWW Conflict ref RC00276/ 3 to 11 inclusive)<br>Drg B1033200/CD/ 2700/CWW/065 to 069 inclusive | <b>Charleston Junction</b><br>Install 1 No. 90mm UPVC duct and associated joint boxes across AWPR Southern Leg carriageway at approx. chainage 206+260 and tie-in to existing cabled duct in east verge of Bothie Brig Cottage Access Track (1).<br><br>Alter frame and cover on existing joint box to suit new FRL on Bothy Brig Access Track at Bothiebrigg |         |                                                             | Design Diversions                                                                                                                 | 4 Weeks                          | 8 Weeks                            | 20 Weeks                |
|                                                                                                          |                                                                                                                                                                                                                                                                                                                                                               |         | Review diversion design.                                    | Review diversion design                                                                                                           |                                  |                                    |                         |
|                                                                                                          |                                                                                                                                                                                                                                                                                                                                                               |         |                                                             | Procure apparatus for diversion.                                                                                                  |                                  |                                    |                         |
|                                                                                                          |                                                                                                                                                                                                                                                                                                                                                               |         | Provide traffic management.                                 | Agree traffic management                                                                                                          |                                  |                                    |                         |
|                                                                                                          |                                                                                                                                                                                                                                                                                                                                                               |         | Consult and comply with Statutory Undertaker's              | Install new ducts and chambers                                                                                                    |                                  |                                    |                         |



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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Group * | Main Works by Company                   | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                     | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |                                         |                                                                                                                                   |                                  |                                    |                         |
|                                                             | Garage.<br>In advance of main works install 1 No. 90mm UPVC duct and associated joint boxes across A90 carriageways at approx. chainages 0+750 and 0+850 and in west verge of A90 as temporary diversion during construction of Loirston Burn culvert.<br>Install 1 No. 90mm UPVC duct in east verge of A90 between approx. chainages 0+750 and 0+850.<br>In advance of main works install 2 x 90mm UPVC ducts and associated joint boxes to allow diversion of existing cabled ducts on U168K Craighill (Red Moss) Road into southbound verge of A90 at location of proposed Loirston Burn culvert. (This requires prior installation of permanent works on A90 southbound verge at this location – see above)<br>Also, in advance of main works, install 89mm PVC duct in stopped |         | requirements                            |                                                                                                                                   |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         | Undertake any required protection works | Inspect and supervise.                                                                                                            |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         | Recover or demolish redundant ducts.    | Install new cables. Undertake jointing, reinstatement and connection works. Demolish redundant chambers. Recover redundant cable. |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Group * | Main Works by Company                                                          | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                                                                                |                                                                               |                                  |                                    |                         |
|                                                             | <p>up section of Old Stonehaven Road between Bloo House and A90 carriageway at approx. chainage 2+350 as temporary diversion of cables associated with Loirston Burn culvert</p> <p>Excavate existing 2 x 89mm PVC cabled ducts in A90 southbound carriageway verge and slew and lower to suit FRL's of Charleston Junction Southbound Diverge and Merge Slip Roads.</p> <p>Either protect or, if required, excavate existing 2 x 89mm PVC cabled ducts in A90 southbound carriageway verge and slew and/or lower to suit substructure of Charleston Junction Overbridge.</p> <p>Protect cables in-situ at C5K hammerhead west of A90 at chainage 2+070</p> |         |                                                                                |                                                                               |                                  |                                    |                         |
| CWW08<br>(CWW C4 Return Drawing Ref. P246600/02/1/16)       | <b>Existing A90 at Balmedie Junction</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | B       | <p>Agree measures to safeguard existing apparatus.</p> <p>Review diversion</p> | <p>Design diversion.</p> <p>Review diversion</p>                              | 6 weeks                          | 20 weeks                           | 4 weeks                 |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                    | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Group * | Main Works by Company                                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |                                                                             |                                                                                                                                                                                                                                                                     |                                  |                                    |                         |
| 26 Rev 1A)<br>Drg:<br>P246600/2700/<br>CWW/002 and<br>P246600/2700/<br>CWW/003 | Prior to construction of Northbound slip roads and west half of Balmedie Underpass, install temporary one way 90mm PVC white duct (approximate length 1030m) and associated F5 chambers to east of proposed Southbound slip roads .<br><br>Divert cables into temporary duct and abandon existing duct.<br><br>Note: Subject to construction sequencing, if the east side of Balmedie Junction is constructed prior to the west, this diversion may form the permanent diversion. (Thus diversion CWW20 may be omitted).<br><br>All new ducts which cross the existing A90 shall use trenchless techniques and shall be installed by the Company for the statutory undertaker. |         | design.<br><br>Consult and comply with statutory undertakers' requirements. | design.<br><br>Procure apparatus for works.<br><br>Agree Traffic Management.<br><br>Inspect and supervise.<br><br>Install required chambers.<br><br>Undertake connection and reinstatement works.<br><br>Test and commissioning.<br><br>Abandon existing apparatus. |                                  |                                    |                         |
| CWW09                                                                          | <b>Existing A90 at southern</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | B       | Agree measures to safeguard existing                                        | Design diversion.                                                                                                                                                                                                                                                   | 4 weeks                          | 4 weeks                            | 6 weeks                 |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                    | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                              |                                                                               |                                  |                                    |                         |
| (CWW C4 Return Drawing Ref. P246600/02/1/16 27A)<br>Drg: P246600/2700/ CWW/004 | <p><b>branch with proposed A90</b></p> <p>Slew and lower approx. 320m of existing one way duct to allow the construction of the new A90 mainline (temporary works).</p> <p>Demolish footway chamber (at approx. Ch. 390) and replace with split duct (no chamber required).</p> <p>Where existing duct lies in new verge: minimum cover to be 450mm. Where existing duct lies under new carriageway: minimum cover to be 1250mm below finished road level.</p> <p>Demolish existing footway chambers on either side of existing B977 (following completion of diversion CWW20).</p> <p>Note – Subject to construction sequencing, if diversion CWW21 is in place: some or all of the slew and lower elements of this diversion may not be required.</p> |         | apparatus.                                                   |                                                                               |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Review diversion design.                                     | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Consult and comply with statutory undertakers' requirements. |                                                                               |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                              | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Provide Traffic Management.                                  | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Undertake any required protection works.                     | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Recover or demolish redundant ducts.                         | Slew and lower ducts.                                                         |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                                                | Test and commissioning.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |                                                              |                                                                               |                                  |                                    |                         |
| CWW10                                                                          | <b>Existing A90 at proposed South</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | B       | Agree measures to                                            | Design diversion.                                                             | 4 weeks                          | 4 weeks                            | 2 weeks                 |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                    | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                            | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |                                                              |                                                                               |                                  |                                    |                         |
| (CWW C4 Return Drawing Ref. P246600/02/1/16 27A)<br>Drg: P246600/2700/ CWW/004 | <b>Orrock Detention Pond and proposed Balmedie Link Road</b><br>Slew and lower approx. 120m of existing one way duct in the verge of the existing A90 carriageway (temporary works).<br>Minimum cover to be 600mm below Detention Pond Access, elsewhere minimum cover to be 450mm in new verge of Balmedie Link Road.<br>Note – Subject to construction sequencing, if diversion CWW21 is in place: this diversion may be omitted. |         | safeguard existing apparatus.                                |                                                                               |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                     |         | Review diversion design.                                     | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                     |         | Consult and comply with statutory undertakers' requirements. |                                                                               |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |                                                              | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                     |         | Provide Traffic Management.                                  | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                     |         | Undertake any required protection works.                     | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |                                                              | Slew and lower ducts.                                                         |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
| CWW11                                                                          | <b>Existing A90 at proposed South</b>                                                                                                                                                                                                                                                                                                                                                                                               | B       | Agree measures to                                            | Design diversion.                                                             | 4 weeks                          | 4 weeks                            | 2 weeks                 |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                    | Location and Description                                                                                                                                                                                                                 | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>                     |                                                                                                                                                                                                                                          |         |                                                              |                                                                               |                                  |                                    |                         |
| (CWW C4 Return Drawing Ref. P246600/02/1/16 27A)<br>Drg: P246600/2700/ CWW/007 | <b>Orrock Underpass access</b><br>Protect existing duct in-situ (if required). Protection to consist of 100mm concrete haunch over a 15mm sand blinding layer<br><br>Note – If required: slew and lower may replace the concrete haunch. |         | safeguard existing apparatus.                                |                                                                               |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                          |         | Review diversion design.                                     | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                          |         | Consult and comply with statutory undertakers' requirements. |                                                                               |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                          |         |                                                              | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                          |         | Provide Traffic Management.                                  | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                          |         | Undertake any required protection works.                     | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                          |         |                                                              | Slew and lower ducts.                                                         |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                                                                          |         |                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
| CWW12                                                                          | <b>Existing A90 at proposed</b>                                                                                                                                                                                                          | B       | Agree measures to                                            | Design diversion.                                                             | 4 weeks                          | 4 weeks                            | 2 weeks                 |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                    | Location and Description                                                                                                                                                                   | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>                     |                                                                                                                                                                                            |         |                                                              |                                                                               |                                  |                                    |                         |
| (CWW C4 Return Drawing Ref. P246600/02/1/16 28A)<br>Drg: P246600/2700/ CWW/008 | <b>Orrock Overbridge access</b><br>Slew and lower existing cabled duct (approx. 50m) to allow construction of the overbridge access road. Minimum cover to be 600mm below new carriageway. |         | safeguard existing apparatus.                                |                                                                               |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                            |         | Review diversion design.                                     | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                            |         | Consult and comply with statutory undertakers' requirements. |                                                                               |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                            |         |                                                              | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                            |         | Provide Traffic Management.                                  | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                            |         | Undertake any required protection works.                     | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                            |         |                                                              | Slew and lower ducts.                                                         |                                  |                                    |                         |
|                                                                                |                                                                                                                                                                                            |         |                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                                                | Test and commissioning.                                                                                                                                                                    |         |                                                              |                                                                               |                                  |                                    |                         |
| CWW13                                                                          | <b>Existing A90 at Rashierieve</b>                                                                                                                                                         | B       | Review diversion                                             | Review diversion                                                              | 4 weeks                          | 4 weeks                            | 4 weeks                 |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                         | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Group * | Main Works by Company                                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                                             |                                                                               |                                  |                                    |                         |
| (CWW C4 Return Drawing Ref. P246600/02/1/16 30 Rev 1)<br>Drg: P246600/2700/ CWW/014 | Lower and slew approx. 185m of existing one way duct to allow the construction of the proposed A975 connection to the existing A90 (temporary works).<br><br>Ducts to be lowered to achieve at least 600mm depth of cover below finished road level of proposed A975. Minimum cover of 450mm to be provided in verge of existing A90 (where carriageway lowered).<br><br>Note – Subject to construction sequence, if Diversion CWW22 is in place, the length of lowering and slewing may be reduced accordingly. |         | design.<br><br>Consult and comply with statutory undertakers' requirements. | design.                                                                       |                                  |                                    |                         |
|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                                             | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Provide Traffic Management.                                                 | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Undertake any required protection works.                                    | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                                             | Slew and lower ducts.                                                         |                                  |                                    |                         |
|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                                             | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                                             | Test and commissioning.                                                       |                                  |                                    |                         |
| CWW14<br>(CWW C4 Return Drawing Ref. P246600/02/1/16)                               | <b>Existing A90 from Rashierieve to Blairythan Smithy</b><br><br>Protect approx. 300m of existing one way duct to allow the                                                                                                                                                                                                                                                                                                                                                                                      | B       | Agree measures to safeguard existing apparatus.                             | Design diversion.                                                             | 4 weeks                          | 1 week                             | 1 week                  |
|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Review diversion                                                            | Review diversion                                                              |                                  |                                    |                         |



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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                            | Location and Description                                                                                                                                                                                                                                                                                      | Group * | Main Works by Company                                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>                             |                                                                                                                                                                                                                                                                                                               |         |                                                                             |                                                                               |                                  |                                    |                         |
| 30 Rev 1)<br>Drg:<br>P246600/2700/<br>CWW/014 Rev A<br>and<br>P246600/2700/<br>CWW/015 | construction of the proposed A90 dual-carriageway and Foveran Link Road (temporary works).<br><br>Protection to consist of a 100mm concrete haunch over a 15mm sand blinding layer.<br><br>Note – Subject to construction sequencing if Diversion CWW22 is in place: these protection works shall be omitted. |         | design.<br><br>Consult and comply with statutory undertakers' requirements. | design.                                                                       |                                  |                                    |                         |
|                                                                                        |                                                                                                                                                                                                                                                                                                               |         |                                                                             | (No procurement anticipated)                                                  |                                  |                                    |                         |
|                                                                                        |                                                                                                                                                                                                                                                                                                               |         | Provide Traffic Management.                                                 | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                                                        |                                                                                                                                                                                                                                                                                                               |         | Undertake any required protection works.                                    | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                                                        |                                                                                                                                                                                                                                                                                                               |         |                                                                             | (No connections anticipated)                                                  |                                  |                                    |                         |
|                                                                                        |                                                                                                                                                                                                                                                                                                               |         |                                                                             | Test and commissioning.                                                       |                                  |                                    |                         |
| CWW15<br>(CWW C4 Return Drawing Ref.<br>P246600/02/1/16<br>31 Rev 1)<br>Drg:           | <b>Existing A90 at proposed Foveran Road Overbridge access</b><br><br>Slew and lower existing cabled duct, approx. 50m to allow the construction of the Overbridge                                                                                                                                            | B       | Agree measures to safeguard existing apparatus.                             | Design diversion.                                                             | 4 weeks                          | 4 weeks                            | 2 weeks                 |
|                                                                                        |                                                                                                                                                                                                                                                                                                               |         | Review diversion design.<br><br>Consult and comply                          | Review diversion design.                                                      |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                          | Location and Description                                                                                                                                                                                              | Group * | Main Works by Company                                | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>                           |                                                                                                                                                                                                                       |         |                                                      |                                                                               |                                  |                                    |                         |
| P246600/2700/<br>CWW/016                                                             | access road. Minimum cover to be 600mm below new carriageway.                                                                                                                                                         |         | with statutory undertakers' requirements.            |                                                                               |                                  |                                    |                         |
|                                                                                      |                                                                                                                                                                                                                       |         |                                                      | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                                                      |                                                                                                                                                                                                                       |         | Provide Traffic Management.                          | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                                                      |                                                                                                                                                                                                                       |         | Undertake any required protection and slewing works. | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                                                      |                                                                                                                                                                                                                       |         |                                                      | Slew and lower ducts.                                                         |                                  |                                    |                         |
|                                                                                      |                                                                                                                                                                                                                       |         |                                                      | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                                                      |                                                                                                                                                                                                                       |         |                                                      | Test and commissioning.                                                       |                                  |                                    |                         |
| CWW16<br>(CWW C4 Return Drawing Ref. P246600/02/1/16 31 Rev 1)<br>Drg: P246600/2700/ | <b>Existing A90 at proposed Pitmillan Road Overbridge access</b><br><br>Slew and lower existing cabled duct, approx. 50m to allow the construction of the Overbridge access road. Minimum cover to be 600mm below new | B       | Agree measures to safeguard existing apparatus.      | Design diversion.                                                             | 4 weeks                          | 4 weeks                            | 2 weeks                 |
|                                                                                      |                                                                                                                                                                                                                       |         | Review diversion design.                             | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                                      |                                                                                                                                                                                                                       |         | Consult and comply                                   |                                                                               |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference            | Location and Description                                                                                                                                                                                               | Group * | Main Works by Company                           | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>             |                                                                                                                                                                                                                        |         |                                                 |                                                                               |                                  |                                    |                         |
| CWW/017                                                                | carriageway.                                                                                                                                                                                                           |         | with statutory undertakers' requirements.       | Procure apparatus for works. (No procurement anticipated).                    |                                  |                                    |                         |
|                                                                        |                                                                                                                                                                                                                        |         | Provide Traffic Management.                     | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                                        |                                                                                                                                                                                                                        |         |                                                 | Slew and lower ducts.                                                         |                                  |                                    |                         |
|                                                                        |                                                                                                                                                                                                                        |         |                                                 | Undertake connection (no connections anticipated) and reinstatement works.    |                                  |                                    |                         |
|                                                                        |                                                                                                                                                                                                                        |         |                                                 | Test and commissioning.                                                       |                                  |                                    |                         |
| CWW17<br>(CWW C4 Return Drawing Ref. P246600/02/1/16 32 Rev 2)<br>Drg: | <b>Existing A90 at northern branch with proposed A90</b><br>Prior to construction work commencing adjacent to existing duct along the existing A90 install a temporary one way 90mm PVC white duct (approximate length | B       | Agree measures to safeguard existing apparatus. | Design diversion.                                                             | 6 weeks                          | 20 weeks                           | 8 weeks                 |
|                                                                        |                                                                                                                                                                                                                        |         | Review diversion design.                        | Review diversion design.                                                      |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                 | Location and Description                                                                                                                                                                                              | Group * | Main Works by Company                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>                  |                                                                                                                                                                                                                       |         |                                                                   |                                                                               |                                  |                                    |                         |
| P246600/2700/C WW/ 017,<br>P246600/2700/ CWW/018 &<br>P246600/2700/ CWW/019 | 1650m) and associated F5 chambers to generally follow the Land Made Available boundary. Minimum cover depth 450mm except at carriageway crossings<br><br>Divert cables into temporary duct and abandon existing duct. |         | Consult and comply with statutory undertakers' requirements.      | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                       |         | Provide Traffic Management.                                       | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                       |         | Install temporary ducts. Undertake any required protection works. | Inspect and supervise. Install required chambers.                             |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                       |         |                                                                   | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                       |         | Recover or demolish redundant ducts.                              |                                                                               |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                       |         |                                                                   | Test and commissioning.                                                       |                                  |                                    |                         |
| CWW18<br>NOT USED<br>(replaced by revised CWW17)                            | --                                                                                                                                                                                                                    | --      | --                                                                | --                                                                            | --                               | --                                 | --                      |
| CWW19                                                                       | --                                                                                                                                                                                                                    | --      | --                                                                | --                                                                            | --                               | --                                 | --                      |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                                | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |                                                              |                                                                               |                                  |                                    |                         |
| NOT USED<br>(replaced by revised CWW17)                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |                                                              |                                                                               |                                  |                                    |                         |
| CWW20<br>(CWW C4 Return Drawing Ref. P246600/02/1/16 26 Rev 1)<br><br>Drgs:<br>P246600/2700/CWW/002 & P246600/2700/CWW/003 | <b>Verge of proposed A90 at Balmedie Junction, from approx. Ch. -1270 to Ch. -300 (If required)</b><br><br>Install approx. 1,084m of new one way 90mm PVC white duct within the verge of the proposed A90 from Ch. -1270 to Ch. -300. Including construction of F5 Chambers as shown.<br><br>Note: Subject to construction sequence, if the east side of Balmedie Junction is constructed prior to the west, temporary diversion CWW08 shall become the permanent diversion and this diversion shall be omitted.<br><br>All new ducts which cross the existing A90 shall use trenchless techniques and shall be installed by the Company for the statutory undertaker. | B       | Agree measures to safeguard existing apparatus.              | Design diversion.                                                             | 6 weeks                          | 20 weeks                           | 10 weeks                |
|                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | Review diversion design.                                     | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | Consult and comply with statutory undertakers' requirements. | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | Provide Traffic Management.                                  | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | Install ducts and provide any required protection works.     | Inspect and supervise. Install required chambers.                             |                                  |                                    |                         |
|                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | Recover or demolish redundant ducts.                         | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |                                                              | Test and                                                                      |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                                                    | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Group * | Main Works by Company                                                                 | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                                                       |                                                                               |                                  |                                    |                         |
|                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                                                       | commissioning.                                                                |                                  |                                    |                         |
| CWW21<br>(CWW C4 Return Drawing Ref. P246600/02/1/16 26 Rev 1 & 1627 Rev 1)<br>Drgs:<br>P246600/2700/<br>CWW/004 &<br>P246600/2700/<br>CWW/007 | <b>Verge of proposed A90 at Balmedie Junction, from approx. Ch. -300 to South Orrock Access at junction with existing A90</b><br><br>Install approx. 1,582m of new one way 90mm PVC white duct within the verge of the proposed A90 from Ch. -300 to Ch. 1090, thereafter duct to drop down to South Orrock Underpass Access Road and to pass through Underpass to meet existing duct at junction of South Orrock Access Road with existing A90. Including construction of F5 Chambers as shown. | B       | Agree measures to safeguard existing apparatus.                                       | Design diversion.                                                             | 6 weeks                          | 20 weeks                           | 10 weeks                |
|                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Review diversion design. Consult and comply with statutory undertakers' requirements. | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                                                       | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Provide Traffic Management.                                                           | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Install ducts and provide any required protection works.                              | Inspect and supervise. Install required chambers.                             |                                  |                                    |                         |
|                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Recover or demolish redundant ducts.                                                  | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                                                       | Test and commissioning.                                                       |                                  |                                    |                         |
| CWW22<br>(CWW C4 Return Drawing Ref.                                                                                                           | <b>A975 Realignment and Foveran Link Road</b><br>Install approx. 813m of new one                                                                                                                                                                                                                                                                                                                                                                                                                 | B       | Agree measures to safeguard existing apparatus.                                       | Design diversion.                                                             | 6 weeks                          | 20 weeks                           | 10 weeks                |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                                  | Location and Description                                                                                                                                                          | Group * | Main Works by Company                                                                | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>                                                                   |                                                                                                                                                                                   |         |                                                                                      |                                                                               |                                  |                                    |                         |
| P246600/02/1/16<br>30 Rev 1)<br>Drgs:<br>P246600/2700/<br>CWW/013,<br>P246600/2700/<br>CWW/014 &<br>P246600/2700/<br>CWW/015 | way 90mm PVC white duct within the north verge of the proposed A975 Realignment and east verge of the proposed Foveran Link Road. Including construction of F5 Chambers as shown. |         | Review diversion design.Consult and comply with statutory undertakers' requirements. | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                                                                              |                                                                                                                                                                                   |         |                                                                                      | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                                                                                              |                                                                                                                                                                                   |         | Provide Traffic Management.                                                          | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                                                                                              |                                                                                                                                                                                   |         | Install ducts and provide any required protection works.                             | Inspect and supervise. Install required chambers.                             |                                  |                                    |                         |
|                                                                                                                              |                                                                                                                                                                                   |         | Recover or demolish redundant ducts.                                                 | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                                                                                              |                                                                                                                                                                                   |         |                                                                                      | Test and commissioning.                                                       |                                  |                                    |                         |
| CWW23<br>(CWW C4 Return Drawing Ref. P246600/02/1/16                                                                         | <b>Tipperty Junction to Bridgend</b><br>Install approx. 1670m of new one way 90mm PVC white duct within the north verge of the proposed A90 Realignment (proposed local           | B       | Agree measures to safeguard existing apparatus.                                      | Design diversion.                                                             | 6 weeks                          | 20 weeks                           | 10 weeks                |
|                                                                                                                              |                                                                                                                                                                                   |         | Review diversion design.Consult and                                                  | Review diversion                                                              |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                | Location and Description                                                                                                                                                                                                                                                                               | Group * | Main Works by Company                                                                                                                                                                           | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                              | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>                                                 |                                                                                                                                                                                                                                                                                                        |         |                                                                                                                                                                                                 |                                                                                                                                                                                            |                                  |                                    |                         |
| 32 Rev 2)<br>Drgs:<br>P246600/2700/<br>CWW/017 ,<br>P246600/2700/<br>CWW/018 &<br>P246600/2700/<br>CWW/018 | road), Tipperty Junction Roundabout, NB merge slip road and west verge of the proposed A90 dual carriageway. Including construction of F5 Chambers as shown.<br><br>Note – The ducts crossing the existing A90, installed as part of temporary diversion CWW17, may be used for these permanent works. |         | comply with statutory undertakers' requirements.<br><br>Provide Traffic Management.<br><br>Install ducts and provide any required protection works.<br><br>Recover or demolish redundant ducts. | design.<br><br>Procure apparatus for works.<br><br>Agree Traffic Management.<br><br>Inspect and supervise. Install required chambers.<br><br>Undertake connection and reinstatement works. |                                  |                                    |                         |
| CWW24<br>(CWW C4 Return Drawing Ref. P246600/02/1/16 25 Rev 0)<br>Drgs:<br>P246600/2700/<br>CWW/001<br>&   | <b>Millden Junction</b><br>Slew approx. 125m of existing one way duct in the existing verge of the A90 carriageway along the length of the existing de-acceleration lane and existing entry / exit at Millden Junction following their closure, grubbing up and formation of new verge.                | B       | Agree measures to safeguard existing apparatus.<br><br>Review diversion design.<br><br>Consult and comply with statutory undertakers'                                                           | Design diversion.<br><br>Review diversion design.                                                                                                                                          | 4 weeks                          | 4 weeks                            | 2 weeks                 |



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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                       | Group * | Main Works by Company                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|------------------------------------------------|---------|------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Cable and Wireless Worldwide – CWW (Vodafone Group)</b>  |                                                |         |                                          |                                                                               |                                  |                                    |                         |
| P246600/2700/<br>CWW/002                                    | Minimum cover to be 450mm in new verge of A90. |         | requirements.                            |                                                                               |                                  |                                    |                         |
|                                                             |                                                |         |                                          | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                             |                                                |         | Provide Traffic Management.              | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                             |                                                |         | Undertake any required protection works. | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                                                |         |                                          | Slew as required.                                                             |                                  |                                    |                         |
|                                                             |                                                |         |                                          | Undertake connection (if required and reinstatement works.                    |                                  |                                    |                         |
|                                                             |                                                |         |                                          | Test and commissioning.                                                       |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                        | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |                                                                          |                                                                               |                                  |                                    |                         |
| SSED01<br>(SSED ref P25 & P25A)<br>Drg<br>B1033200/CD/<br>2700/SSED/001<br>and 056 | <b>Stonehaven Junction</b><br>Install 150XPLE underground cable as diversion of existing 11kV overhead cable on B979 Stonehaven to Newmacher Road.<br><br>Cable to be laid in 150mm PVC duct with slow bends at top and bottom of batters across AWPR Fastlink carriageway at approx. chainage 0+360.<br><br>Dismantle existing 5 span and pole mounted transformer.<br><br>Dismantle redundant 11kV overhead cable between New Mains of Ury and Stonehaven across existing A90 carriageway at A90 underbridge. (following completion of off-site connection works)<br><br>Install 2No tall intermediate poles on existing 11kV overhead cable across A90 carriageway at new | B       |                                                                          | Design diversion                                                              | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |                                                                          | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                    |                         |
|                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         | Review diversion design                                                  | Review diversion design                                                       |                                  |                                    |                         |
|                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         | Consult and comply with Statutory Undertaker's requirements              |                                                                               |                                  |                                    |                         |
|                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion                                               |                                  |                                    |                         |
|                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         | Undertake any required protection works.                                 |                                                                               |                                  |                                    |                         |
|                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         | Provide traffic management                                               | Agree traffic management                                                      |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference      | Location and Description                                                                                                                                                 | Group * | Main Works by Company                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>          |                                                                                                                                                                          |         |                                                                                        |                                                                                                     |                                  |                                    |                         |
|                                                                  | Stonehaven Southbound Merge Slip Road                                                                                                                                    |         | Undertake excavation and lay ducts within LMA including within structures as required. | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                          |         |                                                                                        | Inspect and supervise                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                          |         |                                                                                        | Undertake connection and jointing works                                                             |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                          |         |                                                                                        | Testing and commissioning                                                                           |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                          |         |                                                                                        | Decommission and remove redundant apparatus                                                         |                                  |                                    |                         |
| SSED02<br>(SSED ref P26)<br>Drg<br>B1033200/CD/<br>2700/SSED/057 | <b>Stonehaven Junction</b><br>Install 2 No tall intermediate poles on existing 11kV overhead cable across A90 carriageway at new Stonehaven Southbound Diverge Slip Road | B       |                                                                                        | Design diversion                                                                                    | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                  |                                                                                                                                                                          |         |                                                                                        | Obtain necessary wayleaves and section 37 consents (where required)                                 |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                          |         | Review diversion design                                                                | Review diversion design                                                                             |                                  |                                    |                         |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group * | Main Works by Company                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|---------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                          |         |                                                                                        |                                                                                                     |                                  |                                    |                         |
|                                                             |                          |         | Consult and comply with Statutory Undertaker's requirements                            |                                                                                                     |                                  |                                    |                         |
|                                                             |                          |         | Agree measures to safeguard existing apparatus with Statutory Undertaker               | Procure apparatus for diversion                                                                     |                                  |                                    |                         |
|                                                             |                          |         | Undertake any required protection works.                                               |                                                                                                     |                                  |                                    |                         |
|                                                             |                          |         | Provide traffic management                                                             | Agree traffic management                                                                            |                                  |                                    |                         |
|                                                             |                          |         | Undertake excavation and lay ducts within LMA including within structures as required. | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                         |
|                                                             |                          |         |                                                                                        | Inspect and supervise                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                                                                                        | Undertake connection and jointing works                                                             |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference      | Location and Description                                                                                                                                                                                                                                                                                                                                                                                      | Group * | Main Works by Company                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>          |                                                                                                                                                                                                                                                                                                                                                                                                               |         |                                                             |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                               |         |                                                             | Testing and commissioning                                                     |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                               |         |                                                             | Decommission and remove redundant apparatus                                   |                                  |                                    |                         |
| SSED03<br>(SSED ref P23)<br>Drg<br>B1033200/CD/<br>2700/SSED/004 | <b>Kempstone Hill</b><br>Install 150XPLE underground cable as diversion of existing 11kV overhead cable between new terminal pole at Kempstone Hill Accommodation Works Track and west side of AWPR Fastlink carriageway.<br><br>Cable to be laid in 150mm PVC duct with slow bends at top and bottom of batters across AWPR Fastlink carriageway at approx. chainage 2+320<br><br>Install 11kV overhead line | B       |                                                             | Design diversion                                                              | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                               |         |                                                             | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                               |         | Review diversion design                                     | Review diversion design                                                       |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                               |         | Consult and comply with Statutory Undertaker's requirements |                                                                               |                                  |                                    |                         |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                      | Group * | Main Works by Company                                                                                                                                                                                                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                               | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                                                               |         |                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                             |                                  |                                    |                         |
|                                                             | between existing cables to west of AWPR Fastlink carriageway. |         | Agree measures to safeguard existing apparatus with Statutory Undertaker<br><br>Undertake any required protection works.<br><br>Provide traffic management<br><br>Undertake excavation and lay ducts within LMA including within structures as required. | Procure apparatus for diversion<br><br><br>Agree traffic management<br><br>Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment<br><br>Inspect and supervise<br><br>Undertake connection and jointing works<br><br>Testing and commissioning |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                 | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                                          |                                                                               |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                                          | Decommission and remove redundant apparatus                                   |                                  |                                    |                         |
| SSED04<br>(SSED ref P22)<br>Drg<br>B1033200/CD/<br>2700/SSED/007<br>and 008 | <b>C12K Bridge of Muchalls to Netherley Road</b><br><br>Install 150XPLE underground cable as diversion of existing 11kV overhead cable between Elrick Cottar House and Elrick.<br><br>Dismantle redundant 11kV overhead cables across AWPR Fastlink carriageway at approx. chainages 4+700 and 4+975<br><br>Install 11kV overhead cable between C12K Bridge of Muchalls to Netherley Road across AWPR Fastlink carriageway at approx. chainage 5+325 with 2No tall poles either side of carriageway. | B       |                                                                          | Design diversion                                                              | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                                          | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | Review diversion design                                                  | Review diversion design                                                       |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | Consult and comply with Statutory Undertaker's requirements              |                                                                               |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion                                               |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | Undertake any required protection works.                                 |                                                                               |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | Provide traffic management                                               | Agree traffic management                                                      |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                 | Location and Description                                                                                                                                                                                            | Group * | Main Works by Company                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
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| <b>Scottish and Southern Energy Distribution (SSED)</b>                     |                                                                                                                                                                                                                     |         |                                                                                        |                                                                                                     |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                     |         | Undertake excavation and lay ducts within LMA including within structures as required. | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                     |         |                                                                                        | Inspect and supervise                                                                               |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                     |         |                                                                                        | Undertake connection and jointing works                                                             |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                     |         |                                                                                        | Testing and commissioning                                                                           |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                     |         |                                                                                        | Decommission and remove redundant apparatus                                                         |                                  |                                    |                         |
| SSED05<br>(SSED ref P21)<br>Drg<br>B1033200/CD/<br>2700/SSED/009<br>and 010 | <b>North Cookney</b><br>Divert existing 33kV overhead cable to new alignment across AWPR Fastlink carriageway at approx. chainage 6+090 and dismantle redundant 33kV overhead line.<br>Install LV underground cable | C       |                                                                                        | Design diversion                                                                                    | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                             |                                                                                                                                                                                                                     |         |                                                                                        | Obtain necessary wayleaves and section 37 consents (where required)                                 |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                     |         | Review diversion design                                                                | Review diversion design                                                                             |                                  |                                    |                         |



Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                    | Group * | Main Works by Company                                                                                                                                                                                                                                                                                                              | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                                  | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                                                                                                                                                                                                                                                                                                                                                                                             |         |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                |                                  |                                    |                         |
|                                                             | <p>across new C25K Muchalls to Burnhead Road. Cable to be laid in 150mm PVC duct under carriageway.</p> <p>Install 2 No intermediate poles on existing 11kv overhead cable across West Stoneyhill Access Road.</p> <p>Erect new poles either side of proposed works at AWPR Fastlink carriageway approx. chainage 7+275, realign existing 11kV overhead line and remove redundant pole.</p> |         | <p>Consult and comply with Statutory Undertaker's requirements</p> <p>Agree measures to safeguard existing apparatus with Statutory Undertaker</p> <p>Undertake any required protection works.</p> <p>Provide traffic management</p> <p>Undertake excavation and lay ducts within LMA including within structures as required.</p> | <p>Procure apparatus for diversion</p> <p>Agree traffic management</p> <p>Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment</p> <p>Inspect and supervise</p> <p>Undertake connection and jointing works</p> <p>Testing and commissioning</p> |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference      | Location and Description                                                                                                                                                                                                                                                                                                                        | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
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| <b>Scottish and Southern Energy Distribution (SSED)</b>          |                                                                                                                                                                                                                                                                                                                                                 |         |                                                                          |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                 |         |                                                                          | Decommission and remove redundant apparatus                                   |                                  |                                    |                         |
| SSED06<br>(SSED ref P20)<br>Drg<br>B1033200/CD/<br>2700/SSED/013 | <b>Crossley</b><br>Extend existing 11kV overhead line to Crossley off pole 22 Stripeside Spur and dismantle redundant 11kV overhead cable across AWPR Fastlink carriageway at approx. chainage 9+340.<br><br>No diversion work currently anticipated to existing 33kV overhead cable across AWPR Fastlink carriageway at approx. chainage 9+890 | B       |                                                                          | Design diversion                                                              | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                 |         |                                                                          | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                 |         | Review diversion design                                                  | Review diversion design                                                       |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                 |         | Consult and comply with Statutory Undertaker's requirements              |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                 |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                 |         | Undertake any required protection works.                                 |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                 |         | Provide traffic management                                               | Agree traffic management                                                      |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                 | Location and Description                                                                                                                                                                                                                     | Group * | Main Works by Company                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>                     |                                                                                                                                                                                                                                              |         |                                                                                        |                                                                                                     |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                                              |         | Undertake excavation and lay ducts within LMA including within structures as required. | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                                              |         |                                                                                        | Inspect and supervise                                                                               |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                                              |         |                                                                                        | Undertake connection and jointing works                                                             |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                                              |         |                                                                                        | Testing and commissioning                                                                           |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                                              |         |                                                                                        | Decommission and remove redundant apparatus                                                         |                                  |                                    |                         |
| SSED07<br>(SSED ref P19)<br>Drg<br>B1033200/CD/<br>2700/SSED/014<br>and 015 | <b>Greens of Crynoch</b><br>Install 150XPLE underground cable as diversion of existing 11kV overhead cable across AWPR Fastlink carriageway at approx. chainage 10+640.<br><br>Cable to be laid in 150mm PVC duct with slow bends at top and | B       |                                                                                        | Design diversion                                                                                    | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                             |                                                                                                                                                                                                                                              |         |                                                                                        | Obtain necessary wayleaves and section 37 consents (where required)                                 |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                                              |         | Review diversion design                                                                | Review diversion design                                                                             |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Group * | Main Works by Company                                                                                                                                                                                                                                                                                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                                   | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                 |                                  |                                    |                         |
|                                                             | bottom of batters across AWPR Fastlink carriageway at approx. chainage 10+970.<br><br>Install 11kV overhead cables on new alignment to west of AWPR Fastlink carriageway and dismantle existing 11kV overhead crossings.<br><br>Terminate existing 33kV overhead cable either side of AWPR Fastlink carriageway at approx. chainage 10+930.<br><br>New 33kV cable to be laid in 150mm PVC duct with slow bends at top and bottom of batters across AWPR Fastlink carriageway at approx. chainage 10+650.<br><br>Dismantle redundant section of 33kV overhead cable. |         | Consult and comply with Statutory Undertaker's requirements<br><br>Agree measures to safeguard existing apparatus with Statutory Undertaker<br><br>Undertake any required protection works.<br><br>Provide traffic management<br><br>Undertake excavation and lay ducts within LMA including within structures as required. | Procure apparatus for diversion<br><br><br><br>Agree traffic management<br><br>Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment<br><br>Inspect and supervise<br><br>Undertake connection and jointing works<br><br>Testing and commissioning |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference      | Location and Description                                                                                                                                                                                                                                                                                       | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
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| <b>Scottish and Southern Energy Distribution (SSED)</b>          |                                                                                                                                                                                                                                                                                                                |         |                                                                          |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                |         |                                                                          | Decommission and remove redundant apparatus                                   |                                  |                                    |                         |
| SSED08<br>(SSED ref P18)<br>Drg<br>B1033200/CD/<br>2700/SSED/017 | <b>Eastland</b><br><br>Realign existing 11kV overhead cables to west of AWPR Southern Leg carriageway.<br><br>Dismantle redundant section of 11kV overhead cable.<br><br>Install 2 No tall intermediate poles on existing 11kV overhead cable across AWPR Southern Leg carriageway at approx. chainage 101+500 | B       |                                                                          | Design diversion                                                              | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                  |                                                                                                                                                                                                                                                                                                                |         |                                                                          | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                |         | Review diversion design                                                  | Review diversion design                                                       |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                |         | Consult and comply with Statutory Undertaker's requirements              |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                |         | Undertake any required protection works.                                 |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                |         | Provide traffic management                                               | Agree traffic management                                                      |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                         | Location and Description                                                                                                                                                                    | Group * | Main Works by Company                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**         |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|---------------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>                             |                                                                                                                                                                                             |         |                                                                                        |                                                                                                     |                                  |                                    |                                 |
|                                                                                     |                                                                                                                                                                                             |         | Undertake excavation and lay ducts within LMA including within structures as required. | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                                 |
|                                                                                     |                                                                                                                                                                                             |         |                                                                                        | Inspect and supervise                                                                               |                                  |                                    |                                 |
|                                                                                     |                                                                                                                                                                                             |         |                                                                                        | Undertake connection and jointing works                                                             |                                  |                                    |                                 |
|                                                                                     |                                                                                                                                                                                             |         |                                                                                        | Testing and commissioning                                                                           |                                  |                                    |                                 |
|                                                                                     |                                                                                                                                                                                             |         |                                                                                        | Decommission and remove redundant apparatus                                                         |                                  |                                    |                                 |
| SSED09<br>(SSED ref P17)<br>Drg<br>B1033200/CD/<br>2700/SSED/018<br>to 20 inclusive | <b>B9077</b><br>Install 150XPLE underground cable as diversion of existing 11kV overhead cable in verge of B9077 South Deeside Road.<br>Dismantle redundant section of 11kV overhead cable. | B       |                                                                                        | Design diversion                                                                                    | 16 Weeks                         | 8 Weeks                            | 3 Weeks                         |
|                                                                                     |                                                                                                                                                                                             |         |                                                                                        | Obtain necessary wayleaves and section 37 consents (where required)                                 |                                  |                                    | Excluding sub-station works TBC |
|                                                                                     |                                                                                                                                                                                             |         | Review diversion design                                                                | Review diversion design                                                                             |                                  |                                    |                                 |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Group * | Main Works by Company                                                                                                                                                                                                                                                                                                              | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                                  | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                |                                  |                                    |                         |
|                                                             | <p><b>Milltimber Brae</b><br/>Divert existing 415v/11kV underground cable to new alignment along station road and under AWPR carriageway at approx. chainage 102850m, including relocation of existing substation.<br/><br/>Dismantle redundant 415v/11kV underground cable.</p> <p><b>A93 North Deeside Road</b><br/>In advance of main works install 1 No. 150mm duct for 415v, and 2 No. 150mm ducts for 11kv in south verge of anticipated temporary road diversion.<br/><br/>Provide 1 No. 150mm duct for 415v, and 2 No. 150mm ducts for 11kv cables in south verge of structure.<br/><br/>Divert cables into temporary and permanent ducts as required</p> |         | <p>Consult and comply with Statutory Undertaker's requirements</p> <p>Agree measures to safeguard existing apparatus with Statutory Undertaker</p> <p>Undertake any required protection works.</p> <p>Provide traffic management</p> <p>Undertake excavation and lay ducts within LMA including within structures as required.</p> | <p>Procure apparatus for diversion</p> <p>Agree traffic management</p> <p>Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment</p> <p>Inspect and supervise</p> <p>Undertake connection and jointing works</p> <p>Testing and commissioning</p> |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                 | Location and Description                                                                                                                                                                                                                                                                                        | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>                     |                                                                                                                                                                                                                                                                                                                 |         |                                                                          |                                                                               |                                  |                                    |                         |
|                                                                             | Dismantle redundant 415v/11kV underground cable.                                                                                                                                                                                                                                                                |         |                                                                          | Decommission and remove redundant apparatus                                   |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                                                                                                                 |         |                                                                          | Construction of new substation including all civils works.                    |                                  |                                    |                         |
| SSED10<br>(SSED ref P16)<br>Drg<br>B1033200/CD/<br>2700/SSED/021<br>and 022 | <b>Contlaw Road</b><br>Install 11kV overhead cables on new alignment across AWPR Southern Leg carriageway at approx. chainage 104+650.<br>Install new underground cable to pick up existing LV overhead cables.<br>Dismantle redundant HV and LV equipment and take LV supplies from repositioned transformers. | B       |                                                                          | Design diversion                                                              | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                             |                                                                                                                                                                                                                                                                                                                 |         |                                                                          | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                                                                                                                 |         | Review diversion design                                                  | Review diversion design                                                       |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                                                                                                                 |         | Consult and comply with Statutory Undertaker's requirements              |                                                                               |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                                                                                                                 |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion                                               |                                  |                                    |                         |



Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description      | Group * | Main Works by Company                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------|---------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                               |         |                                                                                        |                                                                                                     |                                  |                                    |                         |
|                                                             |                               |         | Undertake any required protection works.                                               |                                                                                                     |                                  |                                    |                         |
|                                                             |                               |         | Provide traffic management                                                             | Agree traffic management                                                                            |                                  |                                    |                         |
|                                                             |                               |         | Undertake excavation and lay ducts within LMA including within structures as required. | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                         |
|                                                             |                               |         |                                                                                        | Inspect and supervise                                                                               |                                  |                                    |                         |
|                                                             |                               |         |                                                                                        | Undertake connection and jointing works                                                             |                                  |                                    |                         |
|                                                             |                               |         |                                                                                        | Testing and commissioning                                                                           |                                  |                                    |                         |
|                                                             |                               |         |                                                                                        | Decommission and remove redundant apparatus                                                         |                                  |                                    |                         |
| SSED11                                                      | <b>Beanshill Access Track</b> | B       |                                                                                        | Design diversion                                                                                    | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference       | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                                                                          |                                                                               |                                  |                                    |                         |
| (SSED ref P15)<br>Drg<br>B1033200/CD/<br>2700/SSED/023<br>and 024 | Install intermediate pole on existing 11kV overhead cable across AWPR Southern Leg carriageway at approx. chainage 105+810 to increase clearance.<br><br>Install new 33kV terminal poles on 2 x 33kV overhead lines either side of Beanhill Access Track and install 33kV cables in between laid in 150mm PVC ducts with slow bends at top and bottom of batters.<br><br>Dismantle redundant overhead cables.<br><b>C127C Wester Ord to Blacktop Road</b><br><br>Install 11kV overhead cables to east of AWPR Southern Leg carriageway including carriageway crossing with tall poles at approx. chainage |         |                                                                          | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | Review diversion design                                                  | Review diversion design                                                       |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | Consult and comply with Statutory Undertaker's requirements              |                                                                               |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion                                               |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | Undertake any required protection works.                                 |                                                                               |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | Provide traffic management                                               | Agree traffic management                                                      |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference      | Location and Description                                                                                                                                                                                       | Group * | Main Works by Company                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>          |                                                                                                                                                                                                                |         |                                                                                        |                                                                                                     |                                  |                                    |                         |
|                                                                  | 106+790.<br>Dismantle redundant 415V and 11kV overhead cables.                                                                                                                                                 |         | Undertake excavation and lay ducts within LMA including within structures as required. | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                |         |                                                                                        | Inspect and supervise                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                |         |                                                                                        | Undertake connection and jointing works                                                             |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                |         |                                                                                        | Testing and commissioning                                                                           |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                |         |                                                                                        | Decommission and remove redundant apparatus                                                         |                                  |                                    |                         |
| SSED12<br>(SSED ref P14)<br>Drg<br>B1033200/CD/<br>2700/SSED/025 | <b>Moss of Auchlea</b><br>Install 11kV overhead cables to east of AWPR Southern Leg carriageway and across carriageway at approx. chainage 107+600.<br><br>Dismantle redundant 11kV overhead cables and poles. | B       |                                                                                        | Design diversion                                                                                    | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                  |                                                                                                                                                                                                                |         |                                                                                        | Obtain necessary wayleaves and section 37 consents (where required)                                 |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                |         | Review diversion design                                                                | Review diversion design                                                                             |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group * | Main Works by Company                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|---------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                          |         |                                                                                        |                                                                                                     |                                  |                                    |                         |
|                                                             |                          |         | Consult and comply with Statutory Undertaker's requirements                            |                                                                                                     |                                  |                                    |                         |
|                                                             |                          |         | Agree measures to safeguard existing apparatus with Statutory Undertaker               | Procure apparatus for diversion                                                                     |                                  |                                    |                         |
|                                                             |                          |         | Undertake any required protection works.                                               |                                                                                                     |                                  |                                    |                         |
|                                                             |                          |         | Provide traffic management                                                             | Agree traffic management                                                                            |                                  |                                    |                         |
|                                                             |                          |         | Undertake excavation and lay ducts within LMA including within structures as required. | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                         |
|                                                             |                          |         |                                                                                        | Inspect and supervise                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                                                                                        | Undertake connection and jointing works                                                             |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference       | Location and Description                                                                                                                                                                                | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>           |                                                                                                                                                                                                         |         |                                                                          |                                                                               |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                         |         |                                                                          | Testing and commissioning                                                     |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                         |         |                                                                          | Decommission and remove redundant apparatus                                   |                                  |                                    |                         |
| SSED13<br>(SSED ref P14A)<br>Drg<br>B1033200/CD/<br>2700/SSED/026 | <b>A944 Kingswells</b><br>Dismantle redundant 11kV overhead cable and poles across AWPR Southern Leg carriageway at approx. chainage 108+400<br><br>(Following completion of off-site connection works) | B       |                                                                          | Design diversion                                                              | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                   |                                                                                                                                                                                                         |         |                                                                          | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                         |         | Review diversion design                                                  | Review diversion design                                                       |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                         |         | Consult and comply with Statutory Undertaker's requirements              |                                                                               |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                         |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion                                               |                                  |                                    |                         |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group * | Main Works by Company                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|---------|------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                          |         |                                          |                                                                                                     |                                  |                                    |                         |
|                                                             |                          |         | Undertake any required protection works. |                                                                                                     |                                  |                                    |                         |
|                                                             |                          |         | Provide traffic management               | Agree traffic management                                                                            |                                  |                                    |                         |
|                                                             |                          |         |                                          | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                         |
|                                                             |                          |         |                                          | Inspect and supervise                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                                          | Undertake connection and jointing works                                                             |                                  |                                    |                         |
|                                                             |                          |         |                                          | Testing and commissioning                                                                           |                                  |                                    |                         |
|                                                             |                          |         |                                          | Decommission and remove redundant apparatus                                                         |                                  |                                    |                         |
| SSED14                                                      | <b>Cloghill</b>          | B       |                                          | Design diversion                                                                                    | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference       | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                                                                          |                                                                               |                                  |                                    |                         |
| (SSED ref P13)<br>Drg<br>B1033200/CD/<br>2700/SSED/027<br>and 028 | Install 11kV overhead cables to east of AWPR Southern Leg carriageway and across carriageway at approx. chainage 109+360.<br><br>Dismantle redundant 11kV overhead cables and poles.<br><br>Install intermediate poles on existing 33kV overhead cable across AWPR Southern Leg carriageway at approx. chainage 109+740 to provide max span 120m.<br><br>Install 11kV overhead cables across AWPR Southern Leg carriageway at approx. chainage 109+900 and connect to existing LV network.<br><br>Dismantle redundant 415V overhead cables between Fairley Cloghill overbridge and Woodside |         |                                                                          | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | Review diversion design                                                  | Review diversion design                                                       |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | Consult and comply with Statutory Undertaker's requirements              |                                                                               |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion                                               |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | Undertake any required protection works.                                 |                                                                               |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | Provide traffic management                                               | Agree traffic management                                                      |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                 | Location and Description                                                                                                                                                                                                      | Group * | Main Works by Company                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>                     |                                                                                                                                                                                                                               |         |                                                                                        |                                                                                                     |                                  |                                    |                         |
|                                                                             | of Cloghill.                                                                                                                                                                                                                  |         | Undertake excavation and lay ducts within LMA including within structures as required. | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                               |         |                                                                                        | Inspect and supervise                                                                               |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                               |         |                                                                                        | Undertake connection and jointing works                                                             |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                               |         |                                                                                        | Testing and commissioning                                                                           |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                               |         |                                                                                        | Decommission and remove redundant apparatus                                                         |                                  |                                    |                         |
| SSED15<br>(SSED ref P12)<br>Drg<br>B1033200/CD/<br>2700/SSED/029<br>and 030 | <b>North Kingswells Junction</b><br>Dismantle redundant 11kV overhead cables across AWPR Northern Leg at approx. chainage 315+200.<br>Offsite Works – Install 11kv Overhead cable between Hillhead of Derbeth and Kepplehills | B       |                                                                                        | Design diversion                                                                                    | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                             |                                                                                                                                                                                                                               |         |                                                                                        | Obtain necessary wayleaves and section 37 consents (where required)                                 |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                               |         | Review diversion design                                                                | Review diversion design                                                                             |                                  |                                    |                         |



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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group * | Main Works by Company                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|---------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                          |         |                                                                                        |                                                                                                     |                                  |                                    |                         |
|                                                             | Reservoir                |         | Consult and comply with Statutory Undertaker's requirements                            |                                                                                                     |                                  |                                    |                         |
|                                                             |                          |         | Agree measures to safeguard existing apparatus with Statutory Undertaker               | Procure apparatus for diversion                                                                     |                                  |                                    |                         |
|                                                             |                          |         | Undertake any required protection works.                                               |                                                                                                     |                                  |                                    |                         |
|                                                             |                          |         | Provide traffic management                                                             | Agree traffic management                                                                            |                                  |                                    |                         |
|                                                             |                          |         | Undertake excavation and lay ducts within LMA including within structures as required. | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                         |
|                                                             |                          |         |                                                                                        | Inspect and supervise                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                                                                                        | Undertake connection and jointing works                                                             |                                  |                                    |                         |
|                                                             |                          |         |                                                                                        | Testing and commissioning                                                                           |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference      | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                         | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                                          |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                                          | Decommission and remove redundant apparatus                                   |                                  |                                    |                         |
| SSED16<br>(SSED ref P11)<br>Drg<br>B1033200/CD/<br>2700/SSED/032 | <b>Craibstone</b><br>Install underground cable as diversion of existing 11kV overhead cable between C89K Chapel of Stoneywood to Fairley Road.<br><br>Cable to be laid in 150mm PVC duct with slow bends at top and bottom of batters across AWPR Northern Leg carriageway at approx. chainage 316+530.<br>Terminate existing line either side of new carriageway.<br><br>Dismantle redundant spur to Sunnybank Cottages, transformer and poles. | B       |                                                                          | Design diversion                                                              | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                                          | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Review diversion design                                                  | Review diversion design                                                       |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Consult and comply with Statutory Undertaker's requirements              |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Undertake any required protection works.                                 |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         | Provide traffic management                                               | Agree traffic management                                                      |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                           | Location and Description                                                                                                                                                                                                               | Group * | Main Works by Company                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>                               |                                                                                                                                                                                                                                        |         |                                                                                        |                                                                                                     |                                  |                                    |                         |
|                                                                                       |                                                                                                                                                                                                                                        |         | Undertake excavation and lay ducts within LMA including within structures as required. | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                         |
|                                                                                       |                                                                                                                                                                                                                                        |         |                                                                                        | Inspect and supervise                                                                               |                                  |                                    |                         |
|                                                                                       |                                                                                                                                                                                                                                        |         |                                                                                        | Undertake connection and jointing works                                                             |                                  |                                    |                         |
|                                                                                       |                                                                                                                                                                                                                                        |         |                                                                                        | Testing and commissioning                                                                           |                                  |                                    |                         |
|                                                                                       |                                                                                                                                                                                                                                        |         |                                                                                        | Decommission and remove redundant apparatus                                                         |                                  |                                    |                         |
| SSED17<br>(SSED ref P11A and P11B)<br>Drg B1033200/CD/2700/SSED/032 to 035 inclusive, | <b>Craibstone Junction</b><br>Dismantle redundant 11kV cables across new A96 Craibstone Junction Link Road at approx. chainage 0+530 and along north verge of existing A96 between Chapel of Stoneywood and new Craibstone Roundabout. | C       |                                                                                        | Design diversion                                                                                    | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                                       |                                                                                                                                                                                                                                        |         |                                                                                        | Obtain necessary wayleaves and section 37 consents (where required)                                 |                                  |                                    |                         |
|                                                                                       |                                                                                                                                                                                                                                        |         | Review diversion design                                                                | Review diversion design                                                                             |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Group * | Main Works by Company                                                                                                                                                                                                                                                                                                              | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                                  | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                |                                  |                                    |                         |
| 070 and 071                                                 | <p>Install 11kV cable overhead cables between Craibstone Roundabout and existing 11kV route either side of AWPR Northern Leg at Balgosie.</p> <p>Cable to be laid in 150mm PVC duct with slow bends at top and bottom of batters across AWPR Northern Leg carriageway at approx. at approx. chainage 318+080.</p> <p>Dismantle redundant 11kV overhead cables across AWPR Northern Leg carriageway at approx. chainage 318+600.</p> <p>Install 240XLPE 11kV underground cable to west of Dyce drive and north of existing A96 including new carriageway crossings of A96 west of existing roundabout, and Dyce Drive north of existing roundabout.</p> <p>Cable to be laid in 150mm PVC</p> |         | <p>Consult and comply with Statutory Undertaker's requirements</p> <p>Agree measures to safeguard existing apparatus with Statutory Undertaker</p> <p>Undertake any required protection works.</p> <p>Provide traffic management</p> <p>Undertake excavation and lay ducts within LMA including within structures as required.</p> | <p>Procure apparatus for diversion</p> <p>Agree traffic management</p> <p>Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment</p> <p>Inspect and supervise</p> <p>Undertake connection and jointing works</p> <p>Testing and commissioning</p> |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                 | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |                       |                                                                               |                                  |                                    |                         |
|                                                                                             | duct under carriageway                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                       | Decommission and remove redundant apparatus                                   |                                  |                                    |                         |
| SSED18<br>(SSED ref P9 and P9A)<br>Drg<br>B1033200/CD/<br>2700/SSED/036<br>to 039 inclusive | <p><b>Kirkhill</b></p> <p>Install 11kV overhead line to west of AWPR Northern Leg carriageway between Kirkhill overbridge and Bogenjoss Pond Access Track.</p> <p>Dismantle redundant 11kV overhead cables across AWPR Northern Leg carriageway at approx. chainages 320+100, 320+550, 321+000 and 321+200.</p> <p>Install 11kV overhead line to west of AWPR Northern Leg carriageway between Bogenjoss Pond Access Track and Pitmedden Farm Access Track 1 (North).</p> <p>Install 11kV overhead cable across AWPR Northern Leg carriageway at approx. chainage 321+900.</p> <p>Dismantle redundant 11kV</p> | B       |                       | Design diversion                                                              | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |                       | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                    |                         |
|                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |                       | Review diversion design                                                       |                                  |                                    |                         |
|                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |                       | Consult and comply with Statutory Undertaker's requirements                   |                                  |                                    |                         |
|                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |                       | Agree measures to safeguard existing apparatus with Statutory Undertaker      |                                  |                                    |                         |
|                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |                       | Undertake any required protection works.                                      |                                  |                                    |                         |
|                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |                       | Provide traffic management                                                    |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference     | Location and Description                                                                                                                                                                                                         | Group * | Main Works by Company                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>         |                                                                                                                                                                                                                                  |         |                                                                                        |                                                                                                     |                                  |                                    |                         |
|                                                                 | overhead cable across AWPR Northern Leg carriageway at approx. chainage 321+810                                                                                                                                                  |         | Undertake excavation and lay ducts within LMA including within structures as required. | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                  |         |                                                                                        | Inspect and supervise                                                                               |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                  |         |                                                                                        | Undertake connection and jointing works                                                             |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                  |         |                                                                                        | Testing and commissioning                                                                           |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                  |         |                                                                                        | Decommission and remove redundant apparatus                                                         |                                  |                                    |                         |
| SSED19<br>(SSED ref P8)<br>Drg<br>B1033200/CD/<br>2700/SSED/040 | <b>Pitmedden Road</b><br>Dismantle redundant 11kV overhead cables across AWPR Northern Leg carriageway at approx. chainage 322+500 following provision of alternative supply to properties (off-site works) north of Dyce Drive. | B       |                                                                                        | Design diversion                                                                                    | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                 |                                                                                                                                                                                                                                  |         |                                                                                        | Obtain necessary wayleaves and section 37 consents (where required)                                 |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                  |         | Review diversion design                                                                | Review diversion design                                                                             |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                            | Group * | Main Works by Company                                                                                                                                                                                                                                                                                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                                   | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                                                                                     |         |                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                 |                                  |                                    |                         |
|                                                             | Protect existing 11kV underground cable in east verge Pitmedden Road at underbridge |         | Consult and comply with Statutory Undertaker's requirements<br><br>Agree measures to safeguard existing apparatus with Statutory Undertaker<br><br>Undertake any required protection works.<br><br>Provide traffic management<br><br>Undertake excavation and lay ducts within LMA including within structures as required. | Procure apparatus for diversion<br><br><br><br>Agree traffic management<br><br>Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment<br><br>Inspect and supervise<br><br>Undertake connection and jointing works<br><br>Testing and commissioning |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                          |                                                                               |                                  |                                    |                         |
|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                          | Decommission and remove redundant apparatus                                   |                                  |                                    |                         |
| SSED20<br>(SSED ref P7)<br>Drg<br>B1033200/CD/<br>2700/SSED/041<br>and 042 | <b>River Don</b><br>Install 33kV underground cable between B977 Echt to Balmedie Road at U198 Goval Cottage Road and south side of AWPR. Cable to pass under River Don Crossing.<br><br>Dismantle redundant 33kV overhead cables across AWPR Northern Leg carriageway at approx. chainage 323+520 and B977 Echt to Balmedie Road at approx. chainage 0+570.<br><br>Install 33kV overhead line across River Don and underground cable between River Don and existing apparatus south of Kirkton of Dyce. | B       |                                                                          | Design diversion                                                              | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                          | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                    |                         |
|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Review diversion design                                                  | Review diversion design                                                       |                                  |                                    |                         |
|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Consult and comply with Statutory Undertaker's requirements              |                                                                               |                                  |                                    |                         |
|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion                                               |                                  |                                    |                         |
|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Undertake any required protection works.                                 |                                                                               |                                  |                                    |                         |
|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Provide traffic management                                               | Agree traffic management                                                      |                                  |                                    |                         |



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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                          | Location and Description                                                                                                                                                                | Group * | Main Works by Company                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>                              |                                                                                                                                                                                         |         |                                                                                        |                                                                                                                                                                                                                                                     |                                  |                                    |                         |
|                                                                                      |                                                                                                                                                                                         |         | Undertake excavation and lay ducts within LMA including within structures as required. | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment                                                                                                                                                 |                                  |                                    |                         |
| SSED21<br>(SSED ref P6A)<br>Drg<br>B1033200/CD/<br>2700/SSED/042<br>to 044 inclusive | <b>Goval Junction</b><br>Install 415V overhead line west of Goval Villa Access Road to Goval Villa.<br>Dismantle redundant 415V overhead line between Goval Villa and Parkhill Cottage. | B       |                                                                                        | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment<br>Inspect and supervise<br>Undertake connection and jointing works<br>Testing and commissioning<br>Decommission and remove redundant apparatus | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                                      |                                                                                                                                                                                         |         | Review diversion design                                                                | Review diversion design                                                                                                                                                                                                                             |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Group * | Main Works by Company                                                                                                                                                                                                                                                                                                              | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                  | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                |                                  |                                    |                         |
|                                                             | <p>Install 11kV overhead line from existing line south of Parkhill Cottage to Goval Farm including crossing of AWPR Northern Leg carriageway at approx. chainage 324+170 and Goval (West) Roundabout to A947 Link Road (1) carriageway.</p> <p>Dismantle redundant 11kV overhead line between Goval Bridge and Goval Farm across AWPR Northern Leg carriageway at approx. chainage 323+950.</p> <p>Install 33kV overhead line west of new A947 Aberdeen to Old Meldrum to Turiff Road across AWPR Northern Leg carriageway at approx. chainage 324+320 and across A947 carriageway at approx. chainage 0+350 as diversion of existing line.</p> <p>Dismantle redundant section of 33kV overhead line.</p> <p>Install 11kV underground cable as</p> |         | <p>Consult and comply with Statutory Undertaker's requirements</p> <p>Agree measures to safeguard existing apparatus with Statutory Undertaker</p> <p>Undertake any required protection works.</p> <p>Provide traffic management</p> <p>Undertake excavation and lay ducts within LMA including within structures as required.</p> | <p>Procure apparatus for diversion</p> <p>Agree traffic management</p> <p>Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment</p> <p>Inspect and supervise</p> |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |                       |                                                                               |                                  |                                    |                         |
|                                                             | diversion of existing 11kV overhead cable across A947 Aberdeen to Old Meldrum Road.<br><br>Cable to be laid in 150mm PVC duct with slow bends at top and bottom of batters across A947 carriageway at approx. chainage 1+075.<br><br>Dismantle redundant section of 11kV overhead line.<br><br>Confirm protection/re-routeing of existing 415V underground supply to Kinnaird/Beech Cottages if existing pole mounted transformer is affected<br><br>Installation of tall poles on existing 11kV overhead line to Little Goval schoolhouse at B977 Echt to Balmedie Road (3) chainage 0+320 if insufficient clearance |         |                       | Undertake connection and jointing works                                       |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |                       | Testing and commissioning                                                     |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |                       | Decommission and remove redundant apparatus                                   |                                  |                                    |                         |
| SSED22                                                      | <b>Parkhill</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | C       |                       | Design diversion                                                              | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                  | Group * | Main Works by Company                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                                                                                                                                           |         |                                                                                        |                                                                                                     |                                  |                                    |                         |
| (SSED ref P5A)<br>Drg<br>B1033200/CD/<br>2700/SSED/046      | Install new poles on existing 11kV overhead cable across AWPR Northern Leg carriageway at approx. chainage 325+590 to provide clear span. |         |                                                                                        | Obtain necessary wayleaves and section 37 consents (where required)                                 |                                  |                                    |                         |
|                                                             | Install 11kV underground cable as diversion of existing 11kV overhead cable across mainline at approx. chainage 326+020.                  |         | Review diversion design                                                                | Review diversion design                                                                             |                                  |                                    |                         |
|                                                             | Dismantle redundant section of 11kV overhead line.                                                                                        |         | Consult and comply with Statutory Undertaker's requirements                            |                                                                                                     |                                  |                                    |                         |
|                                                             |                                                                                                                                           |         | Agree measures to safeguard existing apparatus with Statutory Undertaker               | Procure apparatus for diversion                                                                     |                                  |                                    |                         |
|                                                             |                                                                                                                                           |         | Undertake any required protection works.                                               |                                                                                                     |                                  |                                    |                         |
|                                                             |                                                                                                                                           |         | Provide traffic management                                                             | Agree traffic management                                                                            |                                  |                                    |                         |
|                                                             |                                                                                                                                           |         | Undertake excavation and lay ducts within LMA including within structures as required. | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                         |
|                                                             |                                                                                                                                           |         |                                                                                        | Inspect and supervise                                                                               |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference       | Location and Description                                                                                                                                                                                                                                                                                             | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>           |                                                                                                                                                                                                                                                                                                                      |         |                       |                                                                               |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                      |         |                       | Undertake connection and jointing works                                       |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                      |         |                       | Testing and commissioning                                                     |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                      |         |                       | Decommission and remove redundant apparatus                                   |                                  |                                    |                         |
| SSED23<br>(SSED ref P4A)<br>Drg<br>B1033200/CD/<br>2700/SSED//047 | <b>Lochgreens</b><br>Install 11kV underground cable as diversion of existing 11kV overhead cable.<br><br>Cable to be laid in 150mm PVC duct with slow bends at top and bottom of batters across AWPR Northern Leg carriageway at approx. chainage 326+980.<br><br>Dismantle redundant section of 11kV overhead line. | B       |                       | Design diversion                                                              | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                   |                                                                                                                                                                                                                                                                                                                      |         |                       | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                      |         |                       | Review diversion design                                                       |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                      |         |                       | Consult and comply with Statutory Undertaker's requirements                   |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                      |         |                       | Agree measures to safeguard existing apparatus with Statutory Undertaker      |                                  |                                    |                         |
|                                                                   |                                                                                                                                                                                                                                                                                                                      |         |                       | Procure apparatus for diversion                                               |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group * | Main Works by Company                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|---------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                          |         |                                                                                        |                                                                                                     |                                  |                                    |                         |
|                                                             |                          |         | Undertake any required protection works.                                               |                                                                                                     |                                  |                                    |                         |
|                                                             |                          |         | Provide traffic management                                                             | Agree traffic management                                                                            |                                  |                                    |                         |
|                                                             |                          |         | Undertake excavation and lay ducts within LMA including within structures as required. | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                         |
|                                                             |                          |         |                                                                                        | Inspect and supervise                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                                                                                        | Undertake connection and jointing works                                                             |                                  |                                    |                         |
|                                                             |                          |         |                                                                                        | Testing and commissioning                                                                           |                                  |                                    |                         |
|                                                             |                          |         |                                                                                        | Decommission and remove redundant apparatus                                                         |                                  |                                    |                         |
| SSED24                                                      | <b>Cranfield</b>         | B       |                                                                                        | Design diversion                                                                                    | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference      | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                                                                          |                                                                               |                                  |                                    |                         |
| (SSED ref P4)<br>Drg<br>B1033200/CD/<br>2700/SSED/050<br>and 051 | Install 11kV overhead line across AWPR Northern Leg carriageway at approx. chainage 328+750 as diversion of existing line.<br><br>Dismantle redundant section of 11kV overhead line.<br><br>Install new poles on existing 11kV overhead cable across AWPR Northern Leg carriageway at approx. chainage 329+400 to provide clear span.<br><br>Install 415V underground cable across B999 Aberdeen to Tarves Road at approx. chainage 0+690 as diversion of overhead existing line.<br><br>Dismantle redundant section of 415V overhead line. |         |                                                                          | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | Review diversion design                                                  | Review diversion design                                                       |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | Consult and comply with Statutory Undertaker's requirements              |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | Undertake any required protection works.                                 |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | Provide traffic management                                               | Agree traffic management                                                      |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                     | Location and Description                                                                                                                                                                                                                                 | Group * | Main Works by Company                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>                         |                                                                                                                                                                                                                                                          |         |                                                                                        |                                                                                                     |                                  |                                    |                         |
|                                                                                 |                                                                                                                                                                                                                                                          |         | Undertake excavation and lay ducts within LMA including within structures as required. | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                         |
|                                                                                 |                                                                                                                                                                                                                                                          |         |                                                                                        | Inspect and supervise                                                                               |                                  |                                    |                         |
|                                                                                 |                                                                                                                                                                                                                                                          |         |                                                                                        | Undertake connection and jointing works                                                             |                                  |                                    |                         |
|                                                                                 |                                                                                                                                                                                                                                                          |         |                                                                                        | Testing and commissioning                                                                           |                                  |                                    |                         |
|                                                                                 |                                                                                                                                                                                                                                                          |         |                                                                                        | Decommission and remove redundant apparatus                                                         |                                  |                                    |                         |
| SSED25<br>(SSED ref P1)<br>Drg<br>B1033200/CD/<br>2700/SSED/052,<br>054 and 055 | <b>Blackdog Junction</b><br>Install 11kV overhead line across AWPR Northern Leg carriageway at approx. chainage 330+640.<br>Install 11kV overhead line to north of C1C Belhevie to Wateridgemuir Road including carriageway crossing at approx. chainage | B       |                                                                                        | Design diversion                                                                                    | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                                 |                                                                                                                                                                                                                                                          |         |                                                                                        | Obtain necessary wayleaves and section 37 consents (where required)                                 |                                  |                                    |                         |
|                                                                                 |                                                                                                                                                                                                                                                          |         | Review diversion design                                                                | Review diversion design                                                                             |                                  |                                    |                         |



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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Group * | Main Works by Company                                                                                                                                                                                                                                                                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                     |                                  |                                    |                         |
|                                                             | 0+020.<br>Dismantle redundant 11kV overhead line between point east of AWPR Northern Leg carriageway at chainage 330+700 and Wester Hatton to C1C Access Road.<br>Install 415kV underground cable to the west of Wester Hatton Access Road as diversion for existing overhead line at Wester Hatton.<br>Dismantle redundant section of 11kV overhead line.<br>Install 11kV underground cable as diversion of existing 11kV overhead cable under the existing A90 and the proposed southbound diverge. |         | Consult and comply with Statutory Undertaker's requirements<br>Agree measures to safeguard existing apparatus with Statutory Undertaker<br>Undertake any required protection works.<br>Provide traffic management<br>Undertake excavation and lay ducts within LMA including within structures as required. | Procure apparatus for diversion<br>Agree traffic management<br>Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment<br>Inspect and supervise<br>Undertake connection and jointing works<br>Testing and commissioning |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference     | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
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| <b>Scottish and Southern Energy Distribution (SSED)</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                                                                          |                                                                               |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                                                                          | Decommission and remove redundant apparatus                                   |                                  |                                    |                         |
| SSED26<br>(SSED ref P2)<br>Drg<br>B1033200/CD/<br>2700/SSED/053 | <b>A90 south of Blackdog Junction</b><br>Install 11kV line as diversion to existing overhead connection to Tarbethill landfill site.<br><br>Diversion to be laid overhead from east of Tarbethill Landfill Access Track approx. chainage 3+000 to 0+000 and thence as underground cable to east of A90 at approx. chainage 2+500.<br><br>Dismantle redundant section of 11kV overhead line.<br><br>Divert existing 11kV overhead cable to new alignment west of A90 approx. chainages 1+750 to 2+050 north of Seaview Access Track including extending existing span across A90 as required.<br><br>Extend 415kV underground cable adjacent to Blackdog Industrial | B       |                                                                          | Design diversion                                                              | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                                                                          | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Review diversion design                                                  | Review diversion design                                                       |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Consult and comply with Statutory Undertaker's requirements              |                                                                               |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion                                               |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Undertake any required protection works.                                 |                                                                               |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Provide traffic management                                               | Agree traffic management                                                      |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                 | Location and Description                                                                                                                                                                                           | Group * | Main Works by Company                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>                     |                                                                                                                                                                                                                    |         |                                                                                        |                                                                                                     |                                  |                                    |                         |
|                                                                             | Estate Access Road as alternative supply to "The Gables" property.<br><br>Dismantle redundant section of 11kV overhead line and pole mounted transformer as required at A90 chainage 1+570.                        |         | Undertake excavation and lay ducts within LMA including within structures as required. | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                    |         |                                                                                        | Inspect and supervise                                                                               |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                    |         |                                                                                        | Undertake connection and jointing works                                                             |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                    |         |                                                                                        | Testing and commissioning                                                                           |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                    |         |                                                                                        | Decommission and remove redundant apparatus                                                         |                                  |                                    |                         |
| SSED27<br>(SSED ref P27)<br>Drg<br>B1033200/CD/<br>2700/SSED/058<br>and 059 | <b>Burnhead</b><br><br>Install new 11kv/415v underground connection between Clyanthus Lodge and Blair-Crynoch across C5K Lochton to Auchlunies Road at approx. chainage 0+190.<br><br>Install new 11kv underground | B       |                                                                                        | Design diversion                                                                                    | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                             |                                                                                                                                                                                                                    |         |                                                                                        | Obtain necessary wayleaves and section 37 consents (where required)                                 |                                  |                                    |                         |
|                                                                             |                                                                                                                                                                                                                    |         | Review diversion design                                                                | Review diversion design                                                                             |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Group * | Main Works by Company                                                                                                                                                                                                                                                                                                              | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                  | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                |                                  |                                    |                         |
|                                                             | <p>connection to Burnhead across C5K Lochton to Auchlunies Road at approx. chainage 0+400 from existing 11kV overhead line to east of C5K.</p> <p>Dismantle redundant 11kV overhead cables across AWPR Southern Leg carriageway at approx. chainage 200+580.</p> <p>Install tall intermediate poles on existing 11kV overhead cables across AWPR Southern Leg carriageway at approx. chainage 200+750.</p> <p>Divert existing 33kV overhead cables to new alignment across AWPR Southern Leg carriageway at approx. chainage 201+220 and dismantle redundant section of 33kV overhead line.</p> <p>Install 11kV overhead line between Whitestone and Merchants Croft with spur to existing overhead route to Ferniebrae north of AWPR Southern Leg between approx.</p> |         | <p>Consult and comply with Statutory Undertaker's requirements</p> <p>Agree measures to safeguard existing apparatus with Statutory Undertaker</p> <p>Undertake any required protection works.</p> <p>Provide traffic management</p> <p>Undertake excavation and lay ducts within LMA including within structures as required.</p> | <p>Procure apparatus for diversion</p> <p>Agree traffic management</p> <p>Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment</p> <p>Inspect and supervise</p> |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                       | Location and Description                                                                                                                                                                                                                                                                                                        | Group * | Main Works by Company   | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>                           |                                                                                                                                                                                                                                                                                                                                 |         |                         |                                                                               |                                  |                                    |                         |
|                                                                                   | chainages 201+080 to 201+700.<br>Dismantle redundant 11kV overhead cables across AWPR Southern Leg carriageway at chainages 201+130 and 210+480.                                                                                                                                                                                |         |                         | Undertake connection and jointing works                                       |                                  |                                    |                         |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                 |         |                         | Testing and commissioning                                                     |                                  |                                    |                         |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                 |         |                         | Decommission and remove redundant apparatus                                   |                                  |                                    |                         |
| SSED28<br>(SSED ref P28 & P28A)<br>Drg B1033200/CD/2700/SSED/059 to 061 inclusive | <b>Newlands, Sunnyside and Bishopston</b><br>Install 11kV overhead line between existing line at Greenloaning and Newlands. Last 2 spans to be installed as underground cable. Cable to be laid in 150mm PVC duct with slow bends at top and bottom of batters across C30K Hillside to Batchart Road at approx. chainage 0+150. | B       |                         | Design diversion                                                              | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                 |         |                         | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                    |                         |
|                                                                                   |                                                                                                                                                                                                                                                                                                                                 |         | Review diversion design | Review diversion design                                                       |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Group * | Main Works by Company                                                                                                                                                                                                                                                                                                              | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                  | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
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| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                |                                  |                                    |                         |
|                                                             | <p>Realign 11kV overhead cable to west of C30K Hillside to Batchart Road at approx. chainage 0+370 to 0+420.</p> <p>Install tall intermediate poles on existing 11kV overhead cable across C30K Hillside to Batchart Road at approx. chainage 0+370.</p> <p>Dismantle redundant 11kV overhead cables across AWPR Southern Leg carriageway at approx. chainage 201+950.</p> <p>Install 11kv underground cable as diversion of existing 11kV overhead cable across Sunnyside Farm Access Road at approx. chainage 0+400 to 0+500 and dismantle redundant section.</p> <p>Install 415V overhead cable from existing line north of AWPR Southern Leg carriageway at approx. chainage 202+850 (including provision of pole mounted transformer) to</p> |         | <p>Consult and comply with Statutory Undertaker's requirements</p> <p>Agree measures to safeguard existing apparatus with Statutory Undertaker</p> <p>Undertake any required protection works.</p> <p>Provide traffic management</p> <p>Undertake excavation and lay ducts within LMA including within structures as required.</p> | <p>Procure apparatus for diversion</p> <p>Agree traffic management</p> <p>Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment</p> <p>Inspect and supervise</p> |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                       | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                                                                                                                |         |                       |                                                                               |                                  |                                    |                         |
|                                                             | Heatherknowe and dismantle redundant overhead 415V cable across AWPR Southern Leg at approx. chainage 202+640. |         |                       | Undertake connection and jointing works                                       |                                  |                                    |                         |
|                                                             |                                                                                                                |         |                       | Testing and commissioning                                                     |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                       |                                                                               |                                  |                                    |                         |
|                                                             | <p>Install 2 No tall intermediate poles on existing 11kV overhead cables across AWPR Southern Leg carriageway at approx. chainage 202+850.</p> <p>Install 95mm ABC (Aerial Bunched Conductor) overhead cable north of AWPR from new pole mounted transformer to existing cable at Bishopston Bungalow and dismantle redundant overhead 415V overhead cable across AWPR Southern Leg carriageway at approx. chainage 203+140.</p> <p>Install 11kV underground cables as replacement to existing overhead cable between Bishopston Access Road (South) and east end of Bishopston Field Access.</p> <p>Reposition air break and dismantle redundant sections of 11kV overhead cable.</p> <p>Install 11kV underground cable as diversion of existing 11kV overhead cable. Cable to be laid in 150mm PVC duct with slow</p> |         |                       | Decommission and remove redundant apparatus                                   |                                  |                                    |                         |
|                                                             | <p>bends at top and bottom of batters across AWPR Southern Leg carriageway at approx. chainage 203+480.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | Page 933 of 1284      |                                                                               |                                  |                                    |                         |



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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                          | Location and Description                                                                                                                                                                                                                                                                | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>                              |                                                                                                                                                                                                                                                                                         |         |                                                                          |                                                                               |                                  |                                    |                         |
| SSED29<br>(SSED ref P29)<br>Drg<br>B1033200/CD/<br>2700/SSED/062<br>to 064 inclusive | <b>Haremooss</b><br>Install 33kV overhead line to south of AWPR Southern Leg carriageway between approx. chainages 204+200 to 205+500 and dismantle redundant section of overhead line including crossings over AWPR Southern Leg carriageway at approx. chainages 204+230 and 205+400. | C       |                                                                          | Design diversion                                                              | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                                      |                                                                                                                                                                                                                                                                                         |         |                                                                          | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                    |                         |
|                                                                                      |                                                                                                                                                                                                                                                                                         |         | Review diversion design                                                  | Review diversion design                                                       |                                  |                                    |                         |
|                                                                                      |                                                                                                                                                                                                                                                                                         |         | Consult and comply with Statutory Undertaker's requirements              |                                                                               |                                  |                                    |                         |
|                                                                                      |                                                                                                                                                                                                                                                                                         |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion                                               |                                  |                                    |                         |
|                                                                                      |                                                                                                                                                                                                                                                                                         |         | Undertake any required protection works.                                 |                                                                               |                                  |                                    |                         |
|                                                                                      |                                                                                                                                                                                                                                                                                         |         | Provide traffic management                                               | Agree traffic management                                                      |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                      | Location and Description                                                                                                                                                                                                                       | Group * | Main Works by Company                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>                          |                                                                                                                                                                                                                                                |         |                                                                                        |                                                                                                     |                                  |                                    |                         |
|                                                                                  |                                                                                                                                                                                                                                                |         | Undertake excavation and lay ducts within LMA including within structures as required. | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                         |
|                                                                                  |                                                                                                                                                                                                                                                |         |                                                                                        | Inspect and supervise                                                                               |                                  |                                    |                         |
|                                                                                  |                                                                                                                                                                                                                                                |         |                                                                                        | Undertake connection and jointing works                                                             |                                  |                                    |                         |
|                                                                                  |                                                                                                                                                                                                                                                |         |                                                                                        | Testing and commissioning                                                                           |                                  |                                    |                         |
|                                                                                  |                                                                                                                                                                                                                                                |         |                                                                                        | Decommission and remove redundant apparatus.                                                        |                                  |                                    |                         |
| SSED30<br>(SSED ref P30)<br>Drg<br>B1033200/CD/<br>2700/SSED/065,<br>066 and 069 | <b>Charleston Junction</b><br>Install 2 No tall intermediate poles on existing 11kV overhead cables across AWPR Southern Leg carriageway at approx. chainage 206+260.<br><br>Install 33kV overhead cable to west of C5K Schoollhill to Lochton | B       |                                                                                        | Design diversion                                                                                    | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                                  |                                                                                                                                                                                                                                                |         |                                                                                        | Obtain necessary wayleaves and section 37 consents (where required)                                 |                                  |                                    |                         |
|                                                                                  |                                                                                                                                                                                                                                                |         | Review diversion design                                                                | Review diversion design                                                                             |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Group * | Main Works by Company                                                                                                                                                                                                                                                                                                              | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                 | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
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| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                               |                                  |                                    |                         |
|                                                             | <p>to Nigg Road and south of C5K Lochton to Auchlunies to Nigg Road including crossing over AWPR Southern Leg carriageway at approx. chainage 206+350 and over existing A90 carriageway at approx. chainage 2+050 at Newton of Charleston including provision of 33kV terminal pole to underground cable.</p> <p>Install 3x1c 33kV 240XLPE underground cable from Newton of Charleston to A956 Wellington Road at approx. chainage 207+080. Cable to be laid in 150mm PVC duct with slow bends at top and bottom of batters across A956 carriageway at approx. chainage 207+080 including provision of termination pole to existing overhead cables.</p> <p>Dismantle redundant section of 33kV overhead cable from C5K</p> |         | <p>Consult and comply with Statutory Undertaker's requirements</p> <p>Agree measures to safeguard existing apparatus with Statutory Undertaker</p> <p>Undertake any required protection works.</p> <p>Provide traffic management</p> <p>Undertake excavation and lay ducts within LMA including within structures as required.</p> | <p>Procure apparatus for diversion</p> <p>Agree traffic management</p> <p>Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment</p> <p>Inspect and supervise</p> <p>Undertake connection and jointing works</p> |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                       |                                                                               |                                  |                                    |                         |
|                                                             | <p>Schollhill to Lochton to Nigg Road approx. chainage 0+400 to A956 Wellington Road at approx. chainage 207+080.</p> <p>Install 11kV overhead cable to south of C5K Lochton to Auchlunies to Nigg Road including crossing over existing A90 carriageway at approx. chainage 2+050 at Newton of Charleston.</p> <p>Locally realign existing 11kV overhead cable to west of C5K Schoollhill to Lochton to Nigg Road at approx. chainage 0+300 and dismantle redundant sections of 11kV overhead cables between this point and Old Stonehaven Road including crossing of existing A90 at approx. chainage 1+780 and existing sub-station.</p> |         |                       | <p>Testing and commissioning</p>                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                       | <p>Decommission and remove redundant apparatus</p>                            |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference      | Location and Description                                                                                                                                                                                                                                                                                                    | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>          |                                                                                                                                                                                                                                                                                                                             |         |                                                                          |                                                                               |                                  |                                    |                         |
| SSED31<br>(SSED ref P31)<br>Drg<br>B1033200/CD/<br>2700/SSED/067 | <b>South of Charleston Junction</b><br>Install tall intermediate poles on existing 11kV overhead cables across C5K Schoolhill to Lochton to Nigg Road at approx. chainages 1+680 and 1+740 and across existing A90 at approx. chainage 0+100.<br><br>Dismantle redundant pole mounted transformer and relocate as required, | B       |                                                                          | Design diversion                                                              | 16 Weeks                         | 8 Weeks                            | 3 Weeks                 |
|                                                                  |                                                                                                                                                                                                                                                                                                                             |         |                                                                          | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                             |         | Review diversion design                                                  | Review diversion design                                                       |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                             |         | Consult and comply with Statutory Undertaker's requirements              |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                             |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                             |         | Undertake any required protection works.                                 |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                             |         | Provide traffic management                                               | Agree traffic management                                                      |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference        | Location and Description                                                                                                  | Group * | Main Works by Company                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>            |                                                                                                                           |         |                                                                                        |                                                                                                     |                                  |                                    |                         |
|                                                                    |                                                                                                                           |         | Undertake excavation and lay ducts within LMA including within structures as required. | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                         |
|                                                                    |                                                                                                                           |         |                                                                                        | Inspect and supervise                                                                               |                                  |                                    |                         |
|                                                                    |                                                                                                                           |         |                                                                                        | Undertake connection and jointing works                                                             |                                  |                                    |                         |
|                                                                    |                                                                                                                           |         |                                                                                        | Testing and commissioning                                                                           |                                  |                                    |                         |
| SSED32<br>(SSED Ref. Plan P1)<br>Drg:<br>P246600/2700<br>/SSED/001 | <b>Existing A90 Crossing at approximate Mainline Ch. -2275</b><br>Install tall intermediate poles either side of the A90. | B       | Consult and comply with statutory undertakers' requirements.                           | SSE to advise.                                                                                      | 16 weeks                         | 8 weeks                            | 1 Week                  |
|                                                                    |                                                                                                                           |         | Excavation of pole foundations                                                         |                                                                                                     |                                  |                                    |                         |
|                                                                    |                                                                                                                           |         |                                                                                        | Divert overhead                                                                                     |                                  |                                    |                         |
|                                                                    |                                                                                                                           |         | Abandon existing poles                                                                 |                                                                                                     |                                  |                                    |                         |
|                                                                    |                                                                                                                           |         | Provide Traffic Management                                                             | Agree Traffic                                                                                       |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference        | Location and Description                                                                                                                                                                                         | Group * | Main Works by Company                                                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>            |                                                                                                                                                                                                                  |         |                                                                                                          |                                                                               |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                                  |         |                                                                                                          | Management.                                                                   |                                  |                                    |                         |
| SSED33<br>(SSED Ref. Plan P2)<br>Drg:<br>P246600/2700<br>/SSED/001 | <b>Existing A90 Crossing at approximate Mainline Ch. -1945</b><br><br>Install tall intermediate poles either side of the A90.                                                                                    | B       | Consult and comply with statutory undertakers' requirements.                                             | SSE to advise.                                                                | 16 weeks                         | 8 weeks                            | 1 Week                  |
|                                                                    |                                                                                                                                                                                                                  |         | Excavation of pole foundations                                                                           |                                                                               |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                                  |         |                                                                                                          | Install poles and divert overhead                                             |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                                  |         | Abandon existing poles                                                                                   |                                                                               |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                                  |         | Provide Traffic Management                                                                               | SSE to advise.                                                                |                                  |                                    |                         |
| SSED34<br>(SSED Ref. Plan P2)<br>Drg:<br>P246600/2700<br>/SSED/002 | <b>Existing A90 Crossing at approximate Mainline Ch. -1680</b><br><br>Divert underground LV cables through new ducted road crossing.<br><br>Cable to be laid in 150mm PVC duct. Include spare 150mm PVC duct. ** | B       | Consult and comply with statutory undertakers' requirements.                                             | As per guidelines.                                                            | 16 weeks                         | 8 weeks                            | 1 Week                  |
|                                                                    |                                                                                                                                                                                                                  |         | Undertake excavation and lay ducts across A90 and open trench within LMA including within structures, as |                                                                               |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference        | Location and Description                                                                                                           | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>            |                                                                                                                                    |         |                                                              |                                                                               |                                  |                                    |                         |
|                                                                    | ** Potentially, no works are required if the minimum cover to the existing LV cables is maintained.                                |         | required.                                                    |                                                                               |                                  |                                    |                         |
|                                                                    |                                                                                                                                    |         |                                                              | Dismantle underground LV                                                      |                                  |                                    |                         |
|                                                                    |                                                                                                                                    |         |                                                              | Install diverted LV cables and associated equipment                           |                                  |                                    |                         |
|                                                                    |                                                                                                                                    |         | Abandon existing apparatus and reinstate                     |                                                                               |                                  |                                    |                         |
|                                                                    |                                                                                                                                    |         | Provide Traffic Management                                   | Agree Traffic Management.                                                     |                                  |                                    |                         |
| SSED35<br>(SSED Ref. Plan P2)<br>Drg:<br>P246600/2700<br>/SSED/002 | <b>New Southfolds Access from approximate Ch. -25 to 100</b><br>Relocate Terminal Pole and install tall poles off the access road. | B       | Consult and comply with statutory undertakers' requirements. | SSE to advise.                                                                | 16 weeks                         | 8 weeks                            | 1 Week                  |
|                                                                    |                                                                                                                                    |         | Excavation of pole foundations                               |                                                                               |                                  |                                    |                         |
|                                                                    |                                                                                                                                    |         |                                                              | Install poles and divert overhead                                             |                                  |                                    |                         |
|                                                                    |                                                                                                                                    |         | Abandon existing poles                                       |                                                                               |                                  |                                    |                         |



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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference        | Location and Description                                                                                                                                                                                  | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>            |                                                                                                                                                                                                           |         |                                                              |                                                                               |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                           |         | Provide Traffic Management                                   | Agree Traffic Management.                                                     |                                  |                                    |                         |
| SSED36<br>(SSED Ref. Plan P3)<br>Drg:<br>P246600/2700<br>/SSED/003 | <b>New Millden Access at approximate Ch. 440</b><br>Install tall poles either side of the road. **<br>** Potentially, no works are required if the minimum height to the existing OH LV is maintained.    | B       | Consult and comply with statutory undertakers' requirements. | SSE to advise.                                                                | 16 weeks                         | 8 weeks                            | 1 Week                  |
| Excavation of pole foundations                                     |                                                                                                                                                                                                           |         |                                                              |                                                                               |                                  |                                    |                         |
| Install poles and divert overhead                                  |                                                                                                                                                                                                           |         |                                                              |                                                                               |                                  |                                    |                         |
| Abandon existing poles                                             |                                                                                                                                                                                                           |         |                                                              |                                                                               |                                  |                                    |                         |
| Provide Traffic Management                                         | Agree Traffic Management.                                                                                                                                                                                 |         |                                                              |                                                                               |                                  |                                    |                         |
| SSED37<br>(SSED Ref. Plan P3)<br>Drg:<br>P246600/2700<br>/SSED/003 | <b>Relocate transformer and divert along the length of the Holdings Access, from approximate Ch. 115 to 350</b><br>Relocate Pole mounted transformer and transfer services to new U/G cable. Dismantle LV | B       | Consult and comply with statutory undertakers' requirements. | SSE to advise.                                                                | 16 weeks                         | 8 weeks                            | 1 Week                  |
| Undertake excavation and lay ducts across Holdings Access          |                                                                                                                                                                                                           |         |                                                              |                                                                               |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference     | Location and Description                                                                                                                                                                                                                        | Group * | Main Works by Company                                                                                                                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>         |                                                                                                                                                                                                                                                 |         |                                                                                                                                                                                        |                                                                               |                                  |                                    |                         |
|                                                                 | overhead line.                                                                                                                                                                                                                                  |         | road and open trench within LMA including within structures, as required                                                                                                               |                                                                               |                                  |                                    |                         |
| SSED38<br>(SSED Ref. Plan P3)<br>Drg: P246600/2700<br>/SSED/003 | <b>Existing A90 Crossing at approximate Mainline Ch. -600</b><br>Divert underground LV cables through new ducted road crossing.<br><br>Cable to be laid in 150mm PVC duct. Include spare 150mm PVC duct. **<br><br>** Potentially, no works are | B       | Consult and comply with statutory undertakers' requirements.<br><br>Undertake excavation and lay ducts across A90 and open trench within LMA including within structures, as required. | SSE to advise.                                                                | 16 weeks                         | 8 weeks                            | 1 Week                  |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference        | Location and Description                                                                                                 | Group * | Main Works by Company                                                                                                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                             | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>            |                                                                                                                          |         |                                                                                                                                             |                                                                                                                                                           |                                  |                                    |                         |
|                                                                    | required if the minimum cover to the existing LV cables is maintained.                                                   |         |                                                                                                                                             | Dismantle underground LV<br>Install diverted LV cables and associated equipment<br>Abandon existing apparatus and reinstate<br>Provide Traffic Management |                                  |                                    |                         |
| SSED39<br>(SSED Ref. Plan P3)<br>Drg:<br>P246600/2700<br>/SSED/003 | <b>Existing A90 Crossing at approximate Mainline Ch. -440</b><br>Install tall intermediate poles either side of the A90. | B       | Consult and comply with statutory undertakers' requirements.<br>Excavation of pole foundations<br>Abandon existing poles<br>Provide Traffic | SSE to advise.<br>Install poles and divert overhead<br>Agree Traffic                                                                                      | 16 weeks                         | 8 weeks                            | 1 Week                  |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference     | Location and Description                                                                                                                                                                                                                                | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>         |                                                                                                                                                                                                                                                         |         |                                                              |                                                                               |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                                         |         | Management                                                   | Management.                                                                   |                                  |                                    |                         |
| SSED39A<br>(SSED Ref. N/A)<br>Drg:<br>P246600/2700<br>/SSED/004 | <b>Existing Keir Farm Road (to east of Underpass) at proposed passing place</b><br><br>Relocate existing service pole to back of existing road verge.<br><br>Ensure the relocated pole is situated outwith the footprint of the proposed passing place. | B       | Consult and comply with statutory undertakers' requirements. | SSE to advise.                                                                | 16 weeks                         | 8 weeks                            | 1 Week                  |
|                                                                 |                                                                                                                                                                                                                                                         |         | Excavation of pole foundations.                              |                                                                               |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                                         |         | Excavate cable trenches and install ducts, as necessary.     |                                                                               |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                                         |         | Provide suitable backfilling material and reinstate.         |                                                                               |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                                         |         |                                                              | Relocate existing pole and divert overhead to new pole location.              |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                                         |         | Abandon existing cables.                                     |                                                                               |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                                                                                                         |         | Provide Traffic Management.                                  | Agree Traffic Management.                                                     |                                  |                                    |                         |
| SSED40                                                          | <b>B977 Realignment Crossing at</b>                                                                                                                                                                                                                     | B       | Consult and comply with statutory                            | SSE to advise.                                                                | 16 weeks                         | 8 weeks                            | 1 Week                  |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference      | Location and Description                                                                                           | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>          |                                                                                                                    |         |                                                              |                                                                               |                                  |                                    |                         |
| (SSED Ref. Plan P3B)<br>Drg: P246600/2700<br>/SSED/005           | <b>approximate Ch. 550</b><br>Install tall intermediate poles either side of the road.                             |         | undertakers' requirements.                                   |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                    |         | Excavation of pole foundations                               |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                    |         |                                                              | Install poles and divert overhead                                             |                                  |                                    |                         |
|                                                                  |                                                                                                                    |         | Abandon existing poles                                       |                                                                               |                                  |                                    |                         |
| SSED41<br>(SSED Ref. Plan P4A)<br>Drg: P246600/2700<br>/SSED/007 | <b>New A90 Crossing at approximate Mainline Ch. 540</b><br>Install tall intermediate poles either side of the A90. | B       | Consult and comply with statutory undertakers' requirements. | SSE to advise.                                                                | 16 weeks                         | 8 weeks                            | 1 Week                  |
|                                                                  |                                                                                                                    |         | Excavation of pole foundations                               |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                    |         |                                                              | Install poles and divert overhead and remove transformer                      |                                  |                                    |                         |
|                                                                  |                                                                                                                    |         | Abandon existing poles                                       |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                    |         | Provide Traffic Management                                   | Agree Traffic Management.                                                     |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                    | Location and Description                                                                                                                                                                                                                                                                             | Group * | Main Works by Company                                                                                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>                                        |                                                                                                                                                                                                                                                                                                      |         |                                                                                                                             |                                                                               |                                  |                                    |                         |
| SSED42<br>(SSED Ref N/A)<br>Drg:<br>P246600/2700<br>/SSED/004 and<br>P246600/2700<br>/SSED/007 | <b>Existing A90 from approximate Ch. 35 to 275</b><br>Dismantle HV overhead line and replace with underground cable.<br>Cable to be laid in 150mm PVC duct across existing A90/Balmedie junction (N), and in verge of existing A90. Include spare 150mm PVC duct.<br>Transformer to remain in place. | B       | Consult and comply with statutory undertakers' requirements.                                                                | SSE to advise.                                                                | 16 weeks                         | 8 weeks                            | 1 Week                  |
|                                                                                                |                                                                                                                                                                                                                                                                                                      |         | Undertake excavation and lay ducts across A90 junction and open trench within LMA including within structures, as required. |                                                                               |                                  |                                    |                         |
|                                                                                                |                                                                                                                                                                                                                                                                                                      |         |                                                                                                                             | Dismantle HV overheads                                                        |                                  |                                    |                         |
|                                                                                                |                                                                                                                                                                                                                                                                                                      |         | Provide Traffic Management.                                                                                                 | Install diverted HV cables and associated equipment                           |                                  |                                    |                         |
|                                                                                                |                                                                                                                                                                                                                                                                                                      |         | Abandon existing apparatus and reinstate                                                                                    |                                                                               |                                  |                                    |                         |
| SSED43<br>(SSED Ref N/A)<br>Drg:<br>P246600/2700                                               | <b>Existing A90 at approximate Ch. 325</b><br>Remove disused UG LV cable.                                                                                                                                                                                                                            | B       | Consult and comply with statutory undertakers' requirements.                                                                | SSE to advise.                                                                | 16 weeks                         | 8 weeks                            | 1 Week                  |
|                                                                                                |                                                                                                                                                                                                                                                                                                      |         | Excavation of crossing                                                                                                      |                                                                               |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference         | Location and Description                                                                                            | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>             |                                                                                                                     |         |                                                              |                                                                               |                                  |                                    |                         |
| /SSED/007                                                           |                                                                                                                     |         |                                                              | Dismantle underground LV                                                      |                                  |                                    |                         |
|                                                                     |                                                                                                                     |         | Abandon existing apparatus and reinstate                     |                                                                               |                                  |                                    |                         |
|                                                                     |                                                                                                                     |         | Provide Traffic Management                                   | Agree Traffic Management.                                                     |                                  |                                    |                         |
| SSED44<br>(SSED Ref. Plan P5A)<br>Drg:<br>P246600/2700<br>/SSED/008 | <b>New A90 Crossing at approximate Mainline Ch. 1360</b><br>Install tall intermediate poles either side of the A90. | B       | Consult and comply with statutory undertakers' requirements. | SSE to advise.                                                                | 16 weeks                         | 8 weeks                            | 1 Week                  |
|                                                                     |                                                                                                                     |         | Excavation of pole foundations                               |                                                                               |                                  |                                    |                         |
|                                                                     |                                                                                                                     |         |                                                              | Install poles and divert overhead                                             |                                  |                                    |                         |
|                                                                     |                                                                                                                     |         | Abandon existing poles                                       |                                                                               |                                  |                                    |                         |
| SSED45<br>(SSED Ref. Plan P5A)                                      | <b>New A90 Crossing at approximate Mainline Ch. 1500</b><br>Dismantle LV overhead and                               | B       | Consult and comply with statutory undertakers' requirements. | SSE to advise.                                                                | 16 weeks                         | 8 weeks                            | 1 Week                  |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference         | Location and Description                                                                                                                                                                                                                                                              | Group * | Main Works by Company                                                                                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected    | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>             |                                                                                                                                                                                                                                                                                       |         |                                                                                                                                                   |                                                                                  |                                  |                                    |                         |
| Drg:<br>P246600/2700<br>/SSED/008                                   | replace with underground cable.<br><br>Cable to be laid in 150mm PVC duct with slow bends at top and bottom of batters across new A90 B-T carriageway. Also, include spare 150mm PVC duct.                                                                                            |         | Undertake excavation and lay ducts across new A90 and open trench within LMA.                                                                     | Dismantle LV overhead<br><br>Install diverted LV cables and associated equipment |                                  |                                    |                         |
| SSED46<br>(SSED Ref. Plan P6A)<br>Drg:<br>P246600/2700<br>/SSED/009 | <b>New A90 Crossing at approximate Mainline Ch. 2600</b><br><br>Dismantle 11kV overhead line and replace with underground cable.<br><br>Cable to be laid in 150mm PVC duct with slow bends at top and bottom of batters across new A90 B-T carriageway. Also, include spare 150mm PVC | B       | Consult and comply with statutory undertakers' requirements.<br><br>Undertake excavation and lay ducts across new A90 and open trench within LMA. | SSE to advise.<br><br>Dismantle LV                                               | 16 weeks                         | 8 weeks                            | 1 Week                  |



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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference      | Location and Description                                                                                                           | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>          |                                                                                                                                    |         |                                                              |                                                                               |                                  |                                    |                         |
|                                                                  | duct.                                                                                                                              |         |                                                              | overhead                                                                      |                                  |                                    |                         |
| SSED47<br>(SSED Ref. Plan P7A)<br>Drg: P246600/2700<br>/SSED/009 | <b>Dambrae Underpass Access at approximate Ch. 125</b><br>Dismantle pole and install 2No. Tall poles to maintain height clearance. | B       | Consult and comply with statutory undertakers' requirements. | SSE to advise.                                                                | 16 weeks                         | 8 weeks                            | 1 Week                  |
|                                                                  |                                                                                                                                    |         | Excavation of pole foundations                               |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                    |         | Install poles and divert overhead                            |                                                                               |                                  |                                    |                         |
|                                                                  |                                                                                                                                    |         | Abandon existing pole                                        |                                                                               |                                  |                                    |                         |
| SSED48<br>(SSED Ref. Plan P8A)<br>Drg: P246600/2700              | <b>New Stoneyards Access Road from approximate Ch. 275 to 560</b><br>LV overhead cable to be dismantled.                           | B       | Consult and comply with statutory undertakers' requirements. | SSE to advise.                                                                | 16 weeks                         | 8 weeks                            | 1 Week                  |
|                                                                  |                                                                                                                                    |         | Undertake excavation and open                                |                                                                               |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference          | Location and Description                                                                                                                                                                                                                                                              | Group * | Main Works by Company                                                              | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>              |                                                                                                                                                                                                                                                                                       |         |                                                                                    |                                                                               |                                  |                                    |                         |
| /SSED/010 and P246600/2700<br>/SSED/011                              | LV underground cable to be laid in the proposed track verge, and to connect to existing poles via service joints.<br><br>Transformer to move back to opposite road side.                                                                                                              |         | trench within LMA.                                                                 |                                                                               |                                  |                                    |                         |
|                                                                      |                                                                                                                                                                                                                                                                                       |         |                                                                                    | Dismantle LV overhead                                                         |                                  |                                    |                         |
|                                                                      |                                                                                                                                                                                                                                                                                       |         |                                                                                    | Install diverted LV cables and associated equipment                           |                                  |                                    |                         |
|                                                                      |                                                                                                                                                                                                                                                                                       |         | Abandon existing apparatus and reinstate                                           |                                                                               |                                  |                                    |                         |
| SSED49<br>(SSED Ref. Plan P9A )<br>Drg:<br>P246600/2700<br>/SSED/014 | <b>Existing A90 from approximate Ch. 70 to 162</b><br><br>Dismantle HV and install intermediate poles.<br><br>Divert underground HV cables through new ducted road crossing.<br><br>Cable to be laid in 150mm PVC duct across existing A90. Include spare 150mm PVC duct at crossing. | B       | Consult and comply with statutory undertakers' requirements.                       | SSE to advise.                                                                | 16 weeks                         | 8 weeks                            | 1 Week                  |
|                                                                      |                                                                                                                                                                                                                                                                                       |         | Undertake excavation and lay ducts across existing A90 and open trench within LMA. |                                                                               |                                  |                                    |                         |
|                                                                      |                                                                                                                                                                                                                                                                                       |         | Provide Traffic Management.                                                        | Dismantle HV overheads                                                        |                                  |                                    |                         |
|                                                                      |                                                                                                                                                                                                                                                                                       |         |                                                                                    | Install diverted overhead HV & LV cables and associated                       |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference        | Location and Description                                                                                                                                                                                              | Group * | Main Works by Company                                                                                                                                              | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>            |                                                                                                                                                                                                                       |         |                                                                                                                                                                    |                                                                               |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                                       |         | Abandon existing apparatus and reinstate                                                                                                                           | equipment                                                                     |                                  |                                    |                         |
| SSED50<br>(SSED Ref. Plan P11A )<br>Drg: P246600/2700<br>/SSED/016 | <b>New A90 Crossing at approximate Mainline Ch. 6365</b><br>Dismantle pole and install 2No. tall poles to maintain height clearance.                                                                                  | B       | Consult and comply with statutory undertakers' requirements.<br>Excavation of pole foundations                                                                     | SSE to advise.<br>Install poles and divert overhead                           | 16 weeks                         | 8 weeks                            | 1 Week                  |
| SSED51<br>(SSED Ref. Plan N/A )<br>Drg: P246600/2700<br>/SSED/018  | <b>B9000 West Realignment at approx. Ch. 400</b><br>Relocate/ install new Pillar into verge of proposed B9000 West Realignment, as necessary.<br>Divert underground cables through new ducted crossing, as necessary. | B       | Consult and comply with statutory undertakers' requirements.<br>Excavation of pillar foundations.<br>Excavate cable trenches, establish joint holes, install ducts | SSE to advise.                                                                | 16 weeks                         | 8 weeks                            | 1 Week                  |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group * | Main Works by Company                                               | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|---------|---------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Distribution (SSED)</b>     |                          |         |                                                                     |                                                                               |                                  |                                    |                         |
|                                                             |                          |         | and provide suitable backfilling material. Reinstate, as necessary. |                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                                                                     | Relocate/ install new pillar and divert cables, as necessary.                 |                                  |                                    |                         |
|                                                             |                          |         | Provide Traffic Management                                          | Agree Traffic Management.                                                     |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference     | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                                                                                                                                                                                           | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                               |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|---------------------------------------------------------------------------------------|
| <b>Scottish and Southern Energy Transmission (SSET)</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                  |                                    |                                                                                       |
| SSET01<br>(SSET ref 07)<br>Drg<br>B1033200/CD/<br>2700/SSET/009 | <p><b>Cookney</b></p> <p>Divert existing cables between poles 135 to 137 of the Cragiebuckler to Fiddes 132kV overhead line to new alignment west of AWPR Fastlink carriageway between approx. chainages 6+000 to 6+700 and thence across AWPR Fastlink carriageway.</p> <p>Dismantle redundant poles and cables.</p> <p><u>NOTE – THERE ARE A CONSIDERABLE NUMBER OF STEPS REQUIRED TO ALLOW WORKS TO COMMENCE ON SITE. DETAILED CONSULTATIONS WITH SSE TRANSMISSION WILL BE REQUIRED TO UNDERSTAND THEIR REQUIREMENTS</u></p> | C       |                       | Design diversion<br><br><i>Obtain necessary wayleaves and section 37 consents (where required)</i><br><br>Review diversion design<br><br>Consult and comply with Statutory Undertaker's requirements<br><br>Agree measures to safeguard existing apparatus with Statutory Undertaker<br><br>Install new poles and cables<br><br>Inspect and supervise.<br><br>Undertake jointing, connection and reinstatement works.<br><br>Testing and commissioning. | 416 Days                         | 30 Days                            | 75 Days<br><br>Earliest anticipated completion Spring 2016 due to outage restrictions |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference     | Location and Description                                                                                                                                                                                                     | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                           |
|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-----------------------------------------------------------------------------------|
| <b>Scottish and Southern Energy Transmission (SSET)</b>         |                                                                                                                                                                                                                              |         |                                                                          |                                                                               |                                  |                                    |                                                                                   |
|                                                                 |                                                                                                                                                                                                                              |         |                                                                          | Decommission and remove redundant apparatus                                   |                                  |                                    |                                                                                   |
| SSET02<br>(SSET ref 05)<br>Drg<br>B1033200/CD/<br>2700/SSET/023 | <b>Beanshill</b><br>No diversion works anticipated to existing cables between towers 644 to 645 of the Cragiebuckler to Tarland 132kV overhead line.                                                                         | B       | Consult and comply with Statutory Undertaker's requirements              |                                                                               | N/A                              | TBC                                | N/A                                                                               |
|                                                                 |                                                                                                                                                                                                                              |         | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               |                                  |                                    |                                                                                   |
| SSET03<br>(SSET ref 04)<br>Drg<br>B1033200/CD/<br>2700/SSET/027 | <b>South Kingswells</b><br>Relocate tower 31 (and possibly tower 32) of the Kintore to Cragiebuckler 132kV overhead line across AWPR Southern Leg carriageway at approx. chainage 108+870<br><br>Dismantle redundant towers. | C       |                                                                          | Design diversion                                                              | TBC                              | TBC                                | TBC<br><br>Earliest anticipated completion Autumn 2015 due to outage restrictions |
|                                                                 |                                                                                                                                                                                                                              |         |                                                                          | <i>Obtain necessary wayleaves and section 37 consents (where required)</i>    |                                  |                                    |                                                                                   |
|                                                                 |                                                                                                                                                                                                                              |         |                                                                          | Review diversion design                                                       |                                  |                                    |                                                                                   |
|                                                                 |                                                                                                                                                                                                                              |         | Consult and comply with Statutory Undertaker's requirements              |                                                                               |                                  |                                    |                                                                                   |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                             | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Transmission (SSET)</b>     |                                                                                                                      |         |                                                                          |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                      |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion                                               |                                  |                                    |                         |
|                                                             |                                                                                                                      |         |                                                                          | Install new transmission towers                                               |                                  |                                    |                         |
|                                                             |                                                                                                                      |         |                                                                          | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                      |         |                                                                          | Undertake jointing, connection and reinstatement works.                       |                                  |                                    |                         |
|                                                             |                                                                                                                      |         |                                                                          | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                      |         |                                                                          | Decommission and remove redundant apparatus                                   |                                  |                                    |                         |
| SSET04<br>(SSET ref 03)<br>Drg                              | <b>Cloghill</b><br>No diversion works anticipated to existing cables between towers 41 to 42 of the Cragiebuckler to | B       | Consult and comply with Statutory Undertaker's requirements              |                                                                               | N/A                              | TBC                                | N/A                     |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference         | Location and Description                                                                                                                                                                                                                     | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Transmission (SSET)</b>             |                                                                                                                                                                                                                                              |         |                                                                          |                                                                               |                                  |                                    |                         |
| B1033200/CD/2700/SSET/027 and 028                                   | Kintore 132kV overhead line.                                                                                                                                                                                                                 |         | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               |                                  |                                    |                         |
| SSET05<br>(SSET ref 08)<br>Drg<br>B1033200/CD/2700/SSET/033 and 070 | <b>A96/A96 Park &amp; Choose</b><br>Install 2 No. Pilot Cables in north verge of proposed A96 Park & Choose Car Park Slip Road as permanent diversion to existing SSET Pilot Cables<br><br><u>Undertaker works to be undertaken by SSED.</u> | B       |                                                                          | Design diversion                                                              | TBC                              | TBC                                | TBC                     |
|                                                                     |                                                                                                                                                                                                                                              |         |                                                                          | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                    |                         |
|                                                                     |                                                                                                                                                                                                                                              |         | Review diversion design                                                  | Review diversion design                                                       |                                  |                                    |                         |
|                                                                     |                                                                                                                                                                                                                                              |         | Consult and comply with Statutory Undertaker's requirements              |                                                                               |                                  |                                    |                         |
|                                                                     |                                                                                                                                                                                                                                              |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion                                               |                                  |                                    |                         |



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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group * | Main Works by Company                         | Works by Statutory Undertakers', Private Apparatus owners and others affected                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|---------|-----------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Transmission (SSET)</b>     |                          |         |                                               |                                                                                                     |                                  |                                    |                         |
|                                                             |                          |         | Undertake any required protection works.      |                                                                                                     |                                  |                                    |                         |
|                                                             |                          |         | Provide traffic management                    | Agree traffic management                                                                            |                                  |                                    |                         |
|                                                             |                          |         | Undertake excavation and lay ducts within LMA | Undertake excavation and lay ducts out with LMA. Install new poles, cables and associated equipment |                                  |                                    |                         |
|                                                             |                          |         |                                               | Inspect and supervise                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                                               | Undertake connection and jointing works                                                             |                                  |                                    |                         |
|                                                             |                          |         |                                               | Testing and commissioning                                                                           |                                  |                                    |                         |
| SSET06                                                      | Kirkton of Dyce          | C       |                                               | Design diversion                                                                                    | 474 days                         | 30 Days                            | 75 Days                 |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                 |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------------------------------------------------------|
| <b>Scottish and Southern Energy Transmission (SSET)</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |                                                                          |                                                                               |                                  |                                    |                                                                         |
| (SSET ref 02)<br>Drg<br>B1033200/CD/<br>2700/SSET/041       | Provide new tower between towers 42 and 43 of the Kintore to Dyce 132kV overhead line, and underground 132kV line from new tower south to sub-station at Dyce. Undergrounded line consists of 3 x 1c 132kV cable circuits and fibre ducts, crossing AWPR Northern Leg carriageway at approx. chainage 323+100. Cable to pass under River Don Crossing.<br><br>Note - Temporary diversion required to facilitate permanent diversion.<br><br>Dismantle redundant towers.<br><br><u>NOTE – THERE ARE A CONSIDERABLE NUMBER OF STEPS REQUIRED TO ALLOW WORKS TO COMMENCE ON SITE. DETAILED CONSULTATIONS WITH SSE TRANSMISSION WILL BE REQUIRED TO UNDERSTAND</u> |         |                                                                          | <i>Obtain necessary wayleaves and section 37 consents (where required)</i>    |                                  |                                    | Earliest anticipated completion October 2015 due to outage restrictions |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         | Review temporary and permanent diversion designs                         | Review temporary and permanent diversion designs                              |                                  |                                    |                                                                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         | Consult and comply with Statutory Undertaker's requirements              | Provide traffic management                                                    |                                  |                                    |                                                                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion                                               |                                  |                                    |                                                                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |                                                                          | Install new transmission tower and cables                                     |                                  |                                    |                                                                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |                                                                          | Inspect and supervise.                                                        |                                  |                                    |                                                                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference     | Location and Description                                                                                                                                          | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Transmission (SSET)</b>         |                                                                                                                                                                   |         |                                                                          |                                                                               |                                  |                                    |                         |
|                                                                 | <u>THEIR REQUIREMENTS</u>                                                                                                                                         |         |                                                                          | Undertake excavation. Install ducts, cables and associated equipment          |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                   |         |                                                                          | Undertake jointing, connection and reinstatement works.                       |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                   |         |                                                                          | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                                 |                                                                                                                                                                   |         |                                                                          | Decommission and remove redundant apparatus                                   |                                  |                                    |                         |
| SSET07<br>(SSET ref 01)<br>Drg<br>B1033200/CD/<br>2700/SSET/047 | <b>Lochgreens</b><br>No diversion works anticipated to existing cables between towers 620 to 621 of the Persley to Kintore to Peterhead 275(400)kV overhead line. | B       | Consult and comply with Statutory Undertaker's requirements              |                                                                               | N/A                              | TBC                                | N/A                     |
|                                                                 |                                                                                                                                                                   |         | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference     | Location and Description                                                                                                                                                       | Group * | Main Works by Company                                                                                                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Transmission (SSET)</b>         |                                                                                                                                                                                |         |                                                                                                                                             |                                                                               |                                  |                                    |                         |
| SSET08<br>(SSET ref 06)<br>Drg<br>B1033200/CD/<br>2700/SSET/060 | <b>Sunnyside</b><br>Construction of strengthened poles outside the LMA and associated line works prior to formation of mainline cutting<br><br>Subject to SSET detailed design | B       | Consult and comply with Statutory Undertaker's requirements<br><br>Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               | TBC                              | TBC                                | TBC                     |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference        | Location and Description                                                                                                                                                                                                                                                                                                                                                  | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Telecoms (SSEC)</b>                |                                                                                                                                                                                                                                                                                                                                                                           |         |                                                                          |                                                                               |                                  |                                    |                         |
| SSEC01<br>(SSEC ref 1)<br><br>Drg<br>B1033200/CD/<br>2700/SSEC/009 | <b>Cookney</b><br>Divert existing cables between poles 135 to 137 of the Cragiebuckler to Fiddes overhead line to new alignment west of AWPR Fastlink carriageway between approx. chainages 6+000 to 6+700 and then across AWPR Fastlink carriageway. Dismantle redundant poles and cables.<br><br><b>Diversion in conjunction with SSE Transmission diversion SSET01</b> | B       |                                                                          | Design diversion                                                              | TBC                              | 3 Months                           | TBC                     |
|                                                                    |                                                                                                                                                                                                                                                                                                                                                                           |         |                                                                          | Obtain necessary wayleaves and section 37 consents                            |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                                                                                                                                                                                           |         | Review diversion design                                                  | Review diversion design                                                       |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                                                                                                                                                                                           |         | Consult and comply with Statutory Undertaker's requirements              |                                                                               |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                                                                                                                                                                                           |         | Agree measures to safeguard existing apparatus with Statutory Undertaker | Procure apparatus for diversion                                               |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                                                                                                                                                                                           |         |                                                                          | Install new telecom cables.                                                   |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                                                                                                                                                                                           |         |                                                                          | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                                                                                                                                                                                           |         |                                                                          | Undertake jointing, connection and reinstatement works.                       |                                  |                                    |                         |
|                                                                    | Testing and commissioning                                                                                                                                                                                                                                                                                                                                                 |         |                                                                          |                                                                               |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference        | Location and Description                                                                                                                                                                                           | Group * | Main Works by Company                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Telecoms (SSEC)</b>                |                                                                                                                                                                                                                    |         |                                                             |                                                                               |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                                    |         |                                                             | Decommission and remove redundant apparatus                                   |                                  |                                    |                         |
| SSEC02<br>(SSEC ref 2)<br><br>Drg<br>B1033200/CD/<br>2700/SSEC/071 | <b>Dyce Drive / A96 Junction</b><br><br>Excavate existing 2 x 89mm PVC cabled ducts in Dyce Drive west verge and slew and lower to suit FRL's<br><br>Divert cables into temporary and permanent ducts as required. | B       |                                                             | Design Diversions.                                                            | TBC                              | 3 Months                           | 3 Months                |
|                                                                    |                                                                                                                                                                                                                    |         | Review diversion design.                                    | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                                    |         |                                                             | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                                    |         | Provide traffic management.                                 | Agree traffic management                                                      |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                                    |         | Consult and comply with Statutory Undertaker's requirements | Install new ducts and chambers.                                               |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                                    |         | Undertake any required protection works.                    | Inspect and supervise.                                                        |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference        | Location and Description                                                                                                                                                                                                  | Group * | Main Works by Company                | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                     | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Telecoms (SSEC)</b>                |                                                                                                                                                                                                                           |         |                                      |                                                                                                                                   |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                                           |         | Recover or demolish redundant ducts. | Install new cables. Undertake jointing, reinstatement and connection works. Demolish redundant chambers. Recover redundant cable. |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                                           |         |                                      | Test and commissioning                                                                                                            |                                  |                                    |                         |
| SSEC03<br>(SSEC ref 3)<br><br>Drg<br>B1033200/CD/<br>2700/SSEC/041 | <b>Kirkton of Dyce</b><br>Replace towers 43 and 44 of the Kintore to Dyce overhead line with terminal towers clear of the proposed works and install fibre ducts across AWPR Northern Leg carriageway at approx. chainage | B       |                                      | Design Diversions.                                                                                                                | TBC                              | 3 Months                           | TBC                     |
|                                                                    |                                                                                                                                                                                                                           |         | Review diversion design.             | Obtain necessary wayleaves and section 37 consents (where required)                                                               |                                  |                                    |                         |
|                                                                    |                                                                                                                                                                                                                           |         | Review diversion design              | Review diversion design                                                                                                           |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                 | Group * | Main Works by Company                                                                                                                                                              | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                                                              | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Telecoms (SSEC)</b>         |                                                                                                                                                                          |         |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                            |                                  |                                    |                         |
|                                                             | 323+100.<br><br>Cable to pass under River Don Crossing.<br><br>Dismantle redundant towers.<br><br><b>Diversion in conjunction with SSE Transmission diversion SSET06</b> |         | Consult and comply with Statutory Undertaker's regarding diversion requirements.<br><br>Agree measures to safeguard existing apparatus with Statutory Undertaker<br><br>.<br><br>. | Provide traffic Management<br><br>Procure apparatus for diversion<br><br>Install new transmission towers and cables.<br><br>Inspect and supervise<br><br>Undertake excavation. Install ducts, cables and associated equipment<br>Undertake jointing, connection and reinstatement works.<br><br>Testing and commissioning. |                                  |                                    |                         |



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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                            | Location and Description                                                                                                                                                                                                                                                                                                                | Group * | Main Works by Company                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                     | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Telecoms (SSEC)</b>                                    |                                                                                                                                                                                                                                                                                                                                         |         |                                                             |                                                                                                                                   |                                  |                                    |                         |
|                                                                                        |                                                                                                                                                                                                                                                                                                                                         |         |                                                             | Decommission and remove redundant apparatus.                                                                                      |                                  |                                    |                         |
| SSEC04<br>(SSEC ref 4)<br><br>Drg<br>B1033200/CD/<br>2700/SSEC/053<br>to 055 inclusive | <b>Blackdog Junction</b><br><br>Excavate existing 89mm PVC cabled duct in A90 northbound carriageway verge and slew and lower to suit FRL's of Blackdog Junction Northbound Diverge and Merge Slip Roads.<br><br>Divert existing 89mm PVC cabled duct in A90 northbound carriageway verge and slew and/or lower to suit new road layout | B       |                                                             | Design Diversions.                                                                                                                | TBC                              | 3 Months                           | 3 Months                |
|                                                                                        |                                                                                                                                                                                                                                                                                                                                         |         | Review diversion design.                                    | Review diversion design.                                                                                                          |                                  |                                    |                         |
|                                                                                        |                                                                                                                                                                                                                                                                                                                                         |         |                                                             | Procure apparatus for diversion.                                                                                                  |                                  |                                    |                         |
|                                                                                        |                                                                                                                                                                                                                                                                                                                                         |         | Provide traffic management.                                 | Agree traffic management                                                                                                          |                                  |                                    |                         |
|                                                                                        |                                                                                                                                                                                                                                                                                                                                         |         | Consult and comply with Statutory Undertaker's requirements | Install new ducts and chambers.                                                                                                   |                                  |                                    |                         |
|                                                                                        |                                                                                                                                                                                                                                                                                                                                         |         | Undertake any required protection works.                    | Inspect and supervise.                                                                                                            |                                  |                                    |                         |
|                                                                                        |                                                                                                                                                                                                                                                                                                                                         |         | Recover or demolish redundant ducts.                        | Install new cables. Undertake jointing, reinstatement and connection works. Demolish redundant chambers. Recover redundant cable. |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                    | Location and Description                                                                                                                                                                                                                                                                                                                                                             | Group * | Main Works by Company                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Telecoms (SSEC)</b>                                            |                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                                                              |                                                                               |                                  |                                    |                         |
|                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                                                              | Test and commissioning                                                        |                                  |                                    |                         |
| SSEC05<br>(SSEC Ref: TBC)<br>Drgs:<br>P246600/2700/<br>SSEC/001 &<br>P246600/2700/<br>SSEC/002 | <b>Millden Junction</b><br>Slew approx. 125m of existing ducts (2 No.) in the existing verge of the A90 carriageway along the length of the existing de-acceleration lane and existing entry / exit at Millden Junction (following their closure, grubbing up and formation of new verge).<br><br>Provide replacement chamber.<br><br>Minimum cover to be 450mm in new verge of A90. | B       | Agree measures to safeguard existing apparatus.                                              | Design diversion.                                                             | 4 weeks                          | 4 weeks                            | 2 weeks                 |
|                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                      |         | Review diversion design.<br><br>Consult and comply with statutory undertakers' requirements. | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                                                              | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                      |         | Provide Traffic Management.                                                                  | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                      |         | Undertake any required protection works.                                                     | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                                                              | Slew as required.                                                             |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                         | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Group * | Main Works by Company                                                                                                                                                                         | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                 | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Telecoms (SSEC)</b>                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |                                                                                                                                                                                               |                                                                                                                               |                                  |                                    |                         |
|                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |                                                                                                                                                                                               | Construct new chamber. Demolish existing chamber.                                                                             |                                  |                                    |                         |
|                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |                                                                                                                                                                                               | Undertake connection (if required and reinstatement works).                                                                   |                                  |                                    |                         |
|                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |                                                                                                                                                                                               | Test and commissioning.                                                                                                       |                                  |                                    |                         |
| SSEC06<br>(SSEC Ref: TBC)<br><br>Drg:<br>P246600/2700/<br>SSEC/002 and<br>P246600/2700/<br>SSEC/003 | <p><b>Existing A90 at Balmedie Junction</b></p> <p>Prior to construction of Northbound slip roads and west half of Balmedie Underpass, install temporary 90mm PVC duct (approximate length 1030m) and associated chambers to east of proposed Southbound slip roads.</p> <p>Divert cables into temporary duct and abandon existing ducts.</p> <p>Note: Subject to construction sequencing, if the east side of Balmedie Junction is constructed prior to the west, this diversion</p> | B       | <p>Agree measures to safeguard existing apparatus.</p> <p>Review diversion design.</p> <p>Consult and comply with statutory undertakers' requirements.</p> <p>Provide Traffic Management.</p> | <p>Design diversion.</p> <p>Review diversion design.</p> <p>Procure apparatus for works.</p> <p>Agree Traffic Management.</p> | 6 weeks                          | 20 weeks                           | 4 weeks                 |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                    | Location and Description                                                                                                                                                                                                                                                                                              | Group * | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Telecoms (SSEC)</b>                                            |                                                                                                                                                                                                                                                                                                                       |         |                                                              |                                                                               |                                  |                                    |                         |
|                                                                                                | shall become the permanent diversion. (Thus diversion SSEC06 may be omitted). If this diversion becomes the permanent solution:- 2 No. ducts shall be provided.<br><br>All new ducts which cross the existing A90 shall use trenchless techniques and shall be installed by the Company for the statutory undertaker. |         | Install temporary ducts (or permanent ducts).                | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                                                                |                                                                                                                                                                                                                                                                                                                       |         |                                                              | Install required chambers.                                                    |                                  |                                    |                         |
|                                                                                                |                                                                                                                                                                                                                                                                                                                       |         | Recover or demolish redundant ducts.                         | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                                                                |                                                                                                                                                                                                                                                                                                                       |         |                                                              | Test and commissioning.                                                       |                                  |                                    |                         |
|                                                                                                |                                                                                                                                                                                                                                                                                                                       |         |                                                              | Abandon existing apparatus.                                                   |                                  |                                    |                         |
| SSEC07<br>(SSEC Ref: TBC)<br>Drgs:<br>P246600/2700/<br>SSEC/002 &<br>P246600/2700/<br>SSEC/003 | <b>Verge of proposed A90 at Balmedie Junction, from approx. Ch. -1270 to Ch. -300 (If required)</b><br><br>Install approx. 1,084m of new 90mm PVC duct (2 No.) within the verge of the proposed A90 from Ch. -1270 to Ch. -300. Including construction of chambers as shown.<br><br>Note: Subject to construction     | B       | Agree measures to safeguard existing apparatus.              | Design diversion.                                                             | 6 weeks                          | 20 weeks                           | 4 weeks                 |
|                                                                                                |                                                                                                                                                                                                                                                                                                                       |         | Review diversion design.                                     | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                                                |                                                                                                                                                                                                                                                                                                                       |         | Consult and comply with statutory undertakers' requirements. |                                                                               |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference    | Location and Description                                                                                                                                                                                                                                                                                                                             | Group * | Main Works by Company                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**   |                                                              |                                                   |                                      |                                               |         |                         |         |  |  |
|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|---------------------------|--------------------------------------------------------------|---------------------------------------------------|--------------------------------------|-----------------------------------------------|---------|-------------------------|---------|--|--|
| <b>Scottish and Southern Energy Telecoms (SSEC)</b>            |                                                                                                                                                                                                                                                                                                                                                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                               |                                  |                                    |                           |                                                              |                                                   |                                      |                                               |         |                         |         |  |  |
|                                                                | sequence, if the east side of Balmedie Junction is constructed prior to the west, temporary diversion SSE06 shall become the permanent diversion and this diversion may be omitted.                                                                                                                                                                  |         | <table border="1"> <tr> <td></td> <td>Procure apparatus for works.</td> </tr> <tr> <td>Provide Traffic Management.</td> <td>Agree Traffic Management.</td> </tr> <tr> <td>Install ducts and provide any required protection works.</td> <td>Inspect and supervise. Install required chambers.</td> </tr> <tr> <td>Recover or demolish redundant ducts.</td> <td>Undertake connection and reinstatement works.</td> </tr> <tr> <td></td> <td>Test and commissioning.</td> </tr> </table> |                                                                               | Procure apparatus for works.     | Provide Traffic Management.        | Agree Traffic Management. | Install ducts and provide any required protection works.     | Inspect and supervise. Install required chambers. | Recover or demolish redundant ducts. | Undertake connection and reinstatement works. |         | Test and commissioning. |         |  |  |
|                                                                | Procure apparatus for works.                                                                                                                                                                                                                                                                                                                         |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                               |                                  |                                    |                           |                                                              |                                                   |                                      |                                               |         |                         |         |  |  |
| Provide Traffic Management.                                    | Agree Traffic Management.                                                                                                                                                                                                                                                                                                                            |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                               |                                  |                                    |                           |                                                              |                                                   |                                      |                                               |         |                         |         |  |  |
| Install ducts and provide any required protection works.       | Inspect and supervise. Install required chambers.                                                                                                                                                                                                                                                                                                    |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                               |                                  |                                    |                           |                                                              |                                                   |                                      |                                               |         |                         |         |  |  |
| Recover or demolish redundant ducts.                           | Undertake connection and reinstatement works.                                                                                                                                                                                                                                                                                                        |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                               |                                  |                                    |                           |                                                              |                                                   |                                      |                                               |         |                         |         |  |  |
|                                                                | Test and commissioning.                                                                                                                                                                                                                                                                                                                              |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                               |                                  |                                    |                           |                                                              |                                                   |                                      |                                               |         |                         |         |  |  |
| SSEC08<br>(SECC Ref: TBC)<br>Drg:<br>P246600/2700/<br>SSEC/004 | <p><b>Existing A90 at southern branch with proposed A90</b></p> <p>Slew and lower approx. 320m of existing ducts to allow the construction of the new A90 mainline (temporary works).</p> <p>Where existing ducts lies in new verge: minimum cover to be 450mm. Where existing ducts lie under new carriageway: minimum cover to be 1250mm below</p> | B       | <table border="1"> <tr> <td>Agree measures to safeguard existing apparatus.</td> <td>Design diversion.</td> </tr> <tr> <td>Review diversion design.</td> <td>Review diversion design.</td> </tr> <tr> <td>Consult and comply with statutory undertakers' requirements.</td> <td></td> </tr> <tr> <td></td> <td>Procure apparatus</td> </tr> </table>                                                                                                                                                                                 | Agree measures to safeguard existing apparatus.                               | Design diversion.                | Review diversion design.           | Review diversion design.  | Consult and comply with statutory undertakers' requirements. |                                                   |                                      | Procure apparatus                             | 4 weeks | 4 weeks                 | 6 weeks |  |  |
| Agree measures to safeguard existing apparatus.                | Design diversion.                                                                                                                                                                                                                                                                                                                                    |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                               |                                  |                                    |                           |                                                              |                                                   |                                      |                                               |         |                         |         |  |  |
| Review diversion design.                                       | Review diversion design.                                                                                                                                                                                                                                                                                                                             |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                               |                                  |                                    |                           |                                                              |                                                   |                                      |                                               |         |                         |         |  |  |
| Consult and comply with statutory undertakers' requirements.   |                                                                                                                                                                                                                                                                                                                                                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                               |                                  |                                    |                           |                                                              |                                                   |                                      |                                               |         |                         |         |  |  |
|                                                                | Procure apparatus                                                                                                                                                                                                                                                                                                                                    |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                               |                                  |                                    |                           |                                                              |                                                   |                                      |                                               |         |                         |         |  |  |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference    | Location and Description                                                                                                                                                                                                                                                                         | Group * | Main Works by Company                             | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Telecoms (SSEC)</b>            |                                                                                                                                                                                                                                                                                                  |         |                                                   |                                                                               |                                  |                                    |                         |
|                                                                | finished road level.<br><br>Demolish existing chamber on north side of existing B977 (following completion of diversion SSEC10).<br><br>Note – Subject to construction sequencing, if diversion SSEC10 is in place: some or all of the slew and lower elements of this diversion may be omitted. |         |                                                   | for works.                                                                    |                                  |                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                                                  |         | Provide Traffic Management.                       | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                                                  |         | Undertake any required protection works.          | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                                                  |         | Recover or demolish redundant ducts and chambers. | Slew and lower ducts.                                                         |                                  |                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                                                  |         |                                                   | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                                                  |         |                                                   | Test and commissioning.                                                       |                                  |                                    |                         |
| SSEC09<br>(SSEC Ref: TBC)<br>Drg:<br>P246600/2700/<br>SSEC/004 | <b>Existing A90 at proposed South Orrock Detention Pond and proposed Balmedie Link Road</b><br><br>Slew and lower approx. 120m of existing ducts in the verge of the existing A90 carriageway (temporary works).<br><br>Minimum cover to be 600mm                                                | B       | Agree measures to safeguard existing apparatus.   | Design diversion.                                                             | 4 weeks                          | 4 weeks                            | 2 weeks                 |
|                                                                |                                                                                                                                                                                                                                                                                                  |         | Review diversion design.                          | Review diversion design.                                                      |                                  |                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                                                  |         | Consult and comply with statutory undertakers'    |                                                                               |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                        | Location and Description                                                                                                                                                                                                                                  | Group * | Main Works by Company                                                                 | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Telecoms (SSEC)</b>                                                |                                                                                                                                                                                                                                                           |         |                                                                                       |                                                                               |                                  |                                    |                         |
|                                                                                                    | below Detention Pond Access, elsewhere minimum cover to be 450mm in new verge of Balmedie Link Road.<br><br>Note – Subject to construction sequencing, if diversion SSEC10 is in place: this temporary diversion may be omitted.                          |         | requirements.                                                                         |                                                                               |                                  |                                    |                         |
|                                                                                                    |                                                                                                                                                                                                                                                           |         |                                                                                       | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                                                                    |                                                                                                                                                                                                                                                           |         | Provide Traffic Management.                                                           | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                                                                    |                                                                                                                                                                                                                                                           |         | Undertake any required protection works.                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                                                                    |                                                                                                                                                                                                                                                           |         |                                                                                       | Slew and lower ducts.                                                         |                                  |                                    |                         |
|                                                                                                    |                                                                                                                                                                                                                                                           |         |                                                                                       | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                                                                    |                                                                                                                                                                                                                                                           |         |                                                                                       | Test and commissioning.                                                       |                                  |                                    |                         |
| SSEC10<br>(SSEC Ref: TBC)<br><br>Drgs:<br>P246600/2700/<br>SSEC/004 &<br>P246600/2700/<br>SSEC/007 | <b>Verge of proposed A90 at Balmedie Junction, from approx. Ch. -300 to South Orrock Access at junction with existing A90</b><br><br>Install approx. 1,582m of new 90mm PVC ducts (2 No.) within the verge of the proposed A90 from Ch. -300 to Ch. 1090, | B       | Agree measures to safeguard existing apparatus.                                       | Design diversion.                                                             | 6 weeks                          | 20 weeks                           | 10 weeks                |
|                                                                                                    |                                                                                                                                                                                                                                                           |         | Review diversion design. Consult and comply with statutory undertakers' requirements. | Review diversion design.                                                      |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference    | Location and Description                                                                                                                                                                                                                              | Group * | Main Works by Company                                                                                                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                              | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Telecoms (SSEC)</b>            |                                                                                                                                                                                                                                                       |         |                                                                                                                                             |                                                                                                                                                                                            |                                  |                                    |                         |
|                                                                | thereafter ducts to drop down to South Orrock Underpass Access Road and to pass through Underpass to meet existing ducts at junction of South Orrock Access Road with existing A90. Including construction of chambers as shown.                      |         |                                                                                                                                             | Procure apparatus for works.<br>Provide Traffic Management.<br>Install ducts and provide any required protection works.<br>Recover or demolish redundant ducts.<br>Test and commissioning. |                                  |                                    |                         |
| SSEC11<br>(SECC Ref: TBC)<br>Drg:<br>P246600/2700/<br>SSET/007 | <b>Existing A90 at proposed South Orrock Underpass access</b><br>Protect existing ducts in-situ (if required). Protection to consist of 100mm concrete haunch over a 15mm sand blinding layer.<br>Note – Alternatively slew and lower existing ducts. | B       | Agree measures to safeguard existing apparatus.<br>Review diversion design.<br>Consult and comply with statutory undertakers' requirements. | Design diversion.<br>Review diversion design.<br>Procure apparatus                                                                                                                         | 4 weeks                          | 4 weeks                            | 2 weeks                 |



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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference    | Location and Description                                                                                                                                                                                                                                                                                                                             | Group * | Main Works by Company                                                                                                                               | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                              | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Telecoms (SSEC)</b>            |                                                                                                                                                                                                                                                                                                                                                      |         |                                                                                                                                                     |                                                                                                                                                                                            |                                  |                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                      |         |                                                                                                                                                     | for works.<br>Provide Traffic Management.<br>Undertake any required protection works.<br>Slew and lower ducts.<br>Undertake connection and reinstatement works.<br>Test and commissioning. |                                  |                                    |                         |
| SSEC12<br>(SECC Ref: TBC)<br>Drg:<br>P246600/2700/<br>SSET/008 | <b>Existing A90 at proposed Orrock Overbridge access</b><br>Slew and lower existing cabled ducts (approx. 50m) to allow construction of new overbridge access road (at junction onto existing A90). Minimum cover to be 600mm below new carriageway.<br><br>If required, reconstruct existing chamber to suit new access (subject to confirmation of | B       | Agree measures to safeguard existing apparatus.<br><br>Review diversion design.<br><br>Consult and comply with statutory undertakers' requirements. | Design diversion.<br><br>Review diversion design.<br><br>Procure apparatus for works.                                                                                                      | 4 weeks                          | 4 weeks                            | 2 weeks                 |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference    | Location and Description                                                                                                                                                                                                                                                      | Group * | Main Works by Company                                                                 | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Telecoms (SSEC)</b>            |                                                                                                                                                                                                                                                                               |         |                                                                                       |                                                                               |                                  |                                    |                         |
|                                                                | chamber's position).                                                                                                                                                                                                                                                          |         | Provide Traffic Management.                                                           | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                               |         | Undertake any required protection works.                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                               |         |                                                                                       | Slew and lower ducts.<br>If required, reconstruct existing chamber.           |                                  |                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                               |         |                                                                                       | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                               |         |                                                                                       | Test and commissioning.                                                       |                                  |                                    |                         |
| SSEC13<br>(SSEC Ref: TBC)<br>Drg:<br>P246600/2700/<br>SSEC/014 | <b>Existing / Realigned A975 near Rashierieve</b><br>Install approx. 590m of new 90mm PVC ducts (2 No.) within the verge of the existing A90, from the existing chamber located to the south of existing A975 junction, to run in south verge of A975 Realignment to existing | B       | Agree measures to safeguard existing apparatus.                                       | Design diversion.                                                             | 4 weeks                          | 20 weeks                           | 4 weeks                 |
|                                                                |                                                                                                                                                                                                                                                                               |         | Review diversion design. Consult and comply with statutory undertakers' requirements. | Review diversion design.                                                      |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                               | Group * | Main Works by Company                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|------------------------------------------------------------------------|---------|----------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish and Southern Energy Telecoms (SSEC)</b>         |                                                                        |         |                                                          |                                                                               |                                  |                                    |                         |
|                                                             | chamber in existing A975. Including construction of chambers as shown. |         |                                                          | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                             |                                                                        |         | Provide Traffic Management.                              | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                             |                                                                        |         | Install ducts and provide any required protection works. | Inspect and supervise. Install required chambers.                             |                                  |                                    |                         |
|                                                             |                                                                        |         | Recover or demolish redundant ducts.                     | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                                                                        |         |                                                          | Test and commissioning.                                                       |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference  | Location and Description                                                                                                                                                                                                                                                                                     | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                                                                                                                                      |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                       |                                                                                                                                                                                                                                                                                                              |         |                                                                          |                                                                               |                                  |                                    |                                                                                                                                                                                                              |
| SGN01<br>(SGN ref S7)<br>Drg<br>B1033200/CD/<br>2700/SGN/001 | <b>Stonehaven Junction</b><br>Install 250mm diameter (reducing to 180mm diameter) medium pressure PE main in west verge of new B979 Netherley Road between junction with Stonehaven Southbound Merge Slip Road and New Mains of Ury.<br><br>Dismantle as required or abandon existing main at same location. | B       |                                                                          | Design diversion                                                              | 4 months                         | 3 months                           | 4 <sup>th</sup> May 2015 – 30 <sup>th</sup> June 2016.<br><br>Phased with Roads construction programme, however, SGN advise SGN01 works shall not be concurrent with any other SGN medium pressure diversion |
|                                                              |                                                                                                                                                                                                                                                                                                              |         | Review diversion design.                                                 | Review diversion design.                                                      |                                  |                                    |                                                                                                                                                                                                              |
|                                                              |                                                                                                                                                                                                                                                                                                              |         |                                                                          | Obtain necessary way leaves and section 37 consents                           |                                  |                                    |                                                                                                                                                                                                              |
|                                                              |                                                                                                                                                                                                                                                                                                              |         | Consult and comply with SGN regarding pipeline requirements.             | Procure apparatus for diversion.                                              |                                  |                                    |                                                                                                                                                                                                              |
|                                                              |                                                                                                                                                                                                                                                                                                              |         | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               |                                  |                                    |                                                                                                                                                                                                              |
|                                                              |                                                                                                                                                                                                                                                                                                              |         | Undertake any required temporary protection works.                       |                                                                               |                                  |                                    |                                                                                                                                                                                                              |
|                                                              |                                                                                                                                                                                                                                                                                                              |         | Provide traffic management.                                              | Agree traffic management.                                                     |                                  |                                    |                                                                                                                                                                                                              |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group * | Main Works by Company                                                                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                      |                          |         |                                                                                                                                        |                                                                               |                                  |                                    |                         |
|                                                             |                          |         |                                                                                                                                        | Install new pipes and associated apparatus.                                   |                                  |                                    |                         |
|                                                             |                          |         |                                                                                                                                        | Undertake jointing, connection, permanent protection and reinstatement works. |                                  |                                    |                         |
|                                                             |                          |         |                                                                                                                                        | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                          |         |                                                                                                                                        | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                          |         | Dismantle as required or abandon redundant apparatus:-<br><br>Date dependant on Roads Construction Programme and Phase Diversion Works |                                                                               |                                  |                                    |                         |
| SGN02                                                       | <b>East Crossley</b>     | C       |                                                                                                                                        | Design diversion                                                              | 4 months                         | 3 months                           | 6 <sup>TH</sup> April   |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                    | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**             |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                      |                                                                                                                                                                                                                             |         |                                                                          |                                                                               |                                  |                                    |                                     |
| (SGN ref STR2)<br>Drg<br>B1033200/CD/<br>2700/SGN/012       | Install 300mm diameter high pressure steel pipeline across AWPR Fastlink carriageway at approx. chainage 9+000.<br><br>Abandon redundant 300mm diameter pipeline across AWPR Fastlink carriageway at approx. chainage 9+100 |         | Review diversion design.                                                 | Review diversion design.                                                      |                                  |                                    | 2015 – 30 <sup>th</sup><br>Oct 2015 |
|                                                             |                                                                                                                                                                                                                             |         |                                                                          | Obtain necessary way leaves and section 37 consents                           |                                  |                                    |                                     |
|                                                             |                                                                                                                                                                                                                             |         | Consult and comply with SGN regarding pipeline requirements.             | Procure apparatus for diversion.                                              |                                  |                                    |                                     |
|                                                             |                                                                                                                                                                                                                             |         | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               |                                  |                                    |                                     |
|                                                             |                                                                                                                                                                                                                             |         | Undertake any required temporary protection works.                       |                                                                               |                                  |                                    |                                     |
|                                                             |                                                                                                                                                                                                                             |         | Provide traffic management.                                              | Agree traffic management.                                                     |                                  |                                    |                                     |
|                                                             |                                                                                                                                                                                                                             |         |                                                                          | Install new pipes and associated apparatus.                                   |                                  |                                    |                                     |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference  | Location and Description                                                                                                                                                                                                                                               | Group * | Main Works by Company                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                                                     |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                       |                                                                                                                                                                                                                                                                        |         |                                                        |                                                                               |                                  |                                    |                                                                                                                             |
|                                                              |                                                                                                                                                                                                                                                                        |         |                                                        | Undertake jointing, connection, permanent protection and reinstatement works. |                                  |                                    |                                                                                                                             |
|                                                              |                                                                                                                                                                                                                                                                        |         |                                                        | Inspect and supervise.                                                        |                                  |                                    |                                                                                                                             |
|                                                              |                                                                                                                                                                                                                                                                        |         |                                                        | Testing and commissioning.                                                    |                                  |                                    |                                                                                                                             |
|                                                              |                                                                                                                                                                                                                                                                        |         | Dismantle as required or abandon redundant apparatus:- |                                                                               |                                  |                                    |                                                                                                                             |
| SGN03<br>(SGN ref S6)<br>Drg<br>B1033200/CD/<br>2700/SGN/019 | <b>Milltimber</b><br>Install 250mm diameter medium pressure polyethylene (MPPE) pipeline between existing 180mm diameter MPPE main west of AWPR Southern Leg carriageway at approx. chainage 102+700 and existing 180mm diameter MPPE main in north verge of A93 North | B       |                                                        | Design diversion                                                              | 4 months                         | 3 months                           | 4 <sup>th</sup> May 2015 – 30 <sup>th</sup> June 2016.<br><br>Phased with Roads construction programme, however, SGN advise |
|                                                              |                                                                                                                                                                                                                                                                        |         | Review diversion design.                               | Review diversion design.                                                      |                                  |                                    |                                                                                                                             |
|                                                              |                                                                                                                                                                                                                                                                        |         |                                                        | Obtain necessary way leaves and section 37 consents                           |                                  |                                    |                                                                                                                             |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Group * | Main Works by Company                                                                                                                                                                                                                            | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                    | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                          |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|----------------------------------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                  |                                  |                                    |                                                                                  |
|                                                             | <p>Deeside Road.</p> <p>Install 250mm diameter MPPE pipeline as connection from new main above to existing 250mm diameter MPPE main south of Milltimber Brae across AWPR Southern Leg carriageway at approx. chainage 102+830.</p> <p>Dismantle as required or abandon redundant 180mm diameter MPPE mains in A93 North Deeside Road.</p> <p>Dismantle as required or abandon redundant 180mm diameter pipeline between A93 North Deeside Road and new connection west of AWPR Southern Leg carriageway at approx. chainage 102+670.</p> |         | <p>Consult and comply with SGN regarding pipeline requirements.</p> <p>Agree measures to safeguard existing apparatus with Statutory Undertaker</p> <p>Undertake any required temporary protection works.</p> <p>Provide traffic management.</p> | <p>Procure apparatus for diversion.</p> <p>Agree traffic management.</p> <p>Install new pipes and associated apparatus.</p> <p>Undertake jointing, connection, permanent protection and reinstatement works.</p> |                                  |                                    | SGN03 works shall not be concurrent with any other SGN medium pressure diversion |



## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference  | Location and Description                                                                                                                                                                                      | Group * | Main Works by Company                                                                                                              | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                             |
|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                       |                                                                                                                                                                                                               |         |                                                                                                                                    |                                                                               |                                  |                                    |                                                                                                     |
|                                                              |                                                                                                                                                                                                               |         |                                                                                                                                    | Inspect and supervise.                                                        |                                  |                                    |                                                                                                     |
|                                                              |                                                                                                                                                                                                               |         |                                                                                                                                    | Testing and commissioning.                                                    |                                  |                                    |                                                                                                     |
|                                                              |                                                                                                                                                                                                               |         | Dismantle as required or abandon redundant apparatus:-<br>Date dependant on Roads Construction Programme and Phase Diversion Works |                                                                               |                                  |                                    |                                                                                                     |
| SGN04<br>(SGN ref N4)<br>Drg<br>B1033200/CD/<br>2700/SGN/030 | <b>North Kingswells</b><br>Install 150mm diameter intermediate pressure steel main to east of Dykeside Roundabout.<br>Abandon redundant 150mm diameter pipeline in C89C Chapel of Stoneywood to Fairley Road. | B       |                                                                                                                                    | Design diversion                                                              | 4 months                         | 3 months                           | 4 <sup>th</sup> May 2015 – 30 <sup>th</sup> June 2016.<br>Phased with Roads construction programme, |
|                                                              |                                                                                                                                                                                                               |         | Review diversion design.                                                                                                           | Review diversion design.                                                      |                                  |                                    |                                                                                                     |
|                                                              |                                                                                                                                                                                                               |         |                                                                                                                                    | Obtain necessary way leaves and section 37 consents                           |                                  |                                    |                                                                                                     |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                      |                          |         |                                                                          |                                                                               |                                  |                                    |                         |
|                                                             |                          |         | Consult and comply with SGN regarding pipeline requirements.             | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                          |         | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               |                                  |                                    |                         |
|                                                             |                          |         | Undertake any required temporary protection works.                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |         | Provide traffic management.                                              | Agree traffic management.                                                     |                                  |                                    |                         |
|                                                             |                          |         |                                                                          | Install new pipes and associated apparatus.                                   |                                  |                                    |                         |
|                                                             |                          |         |                                                                          | Undertake jointing, connection, permanent protection and reinstatement works. |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference             | Location and Description                                                                                                                                                                                                                             | Group * | Main Works by Company                                                                                                              | Works by Statutory Undertakers', Private Apparatus owners and others affected                                | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                |
|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|--------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                                  |                                                                                                                                                                                                                                                      |         |                                                                                                                                    |                                                                                                              |                                  |                                    |                                                        |
|                                                                         |                                                                                                                                                                                                                                                      |         |                                                                                                                                    | Inspect and supervise.                                                                                       |                                  |                                    |                                                        |
|                                                                         |                                                                                                                                                                                                                                                      |         |                                                                                                                                    | Testing and commissioning.                                                                                   |                                  |                                    |                                                        |
|                                                                         |                                                                                                                                                                                                                                                      |         | Dismantle as required or abandon redundant apparatus:-<br>Date dependant on Roads Construction Programme and Phase Diversion Works |                                                                                                              |                                  |                                    |                                                        |
| SGN05<br>(SGN ref N3)<br>Drg<br>B1033200/CD/<br>2700/SGN/031<br>and 032 | <b>Stoneywood</b><br>Install 150mm diameter intermediate pressure steel main to west of AWPR Northern Leg between approx. chainages 316+160 and 316+440 including crossing of AWPR carriageway at approx. chainage 316+160.<br>Install 90mm diameter | C       |                                                                                                                                    | Design diversion                                                                                             | 6 months                         | 3 months                           | 1 <sup>st</sup> June 2015 – 25 <sup>th</sup> Sept 2015 |
|                                                                         |                                                                                                                                                                                                                                                      |         | Review diversion design.                                                                                                           | Review diversion design.                                                                                     |                                  |                                    |                                                        |
|                                                                         |                                                                                                                                                                                                                                                      |         |                                                                                                                                    | Obtain necessary way leaves and section 37 consents (30 <sup>th</sup> April 2013 – 4 <sup>th</sup> Aug 2014) |                                  |                                    |                                                        |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                            | Group * | Main Works by Company                                                                                                                                                                                                                            | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                    | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                  |                                  |                                    |                         |
|                                                             | <p>intermediate pressure steel main to north of Craibstone College Access Road and hence to existing governor west of Craibstone College including crossing of AWPR carriageway at approx. chainage 316+680.</p> <p>Dismantle as required redundant 150mm diameter pipeline across AWPR Northern Leg carriageway at approx. chainage 316+330.</p> <p>Abandon redundant 90mm diameter pipeline across AWPR Northern leg carriageway at approx. chainage 316+720.</p> |         | <p>Consult and comply with SGN regarding pipeline requirements.</p> <p>Agree measures to safeguard existing apparatus with Statutory Undertaker</p> <p>Undertake any required temporary protection works.</p> <p>Provide traffic management.</p> | <p>Procure apparatus for diversion.</p> <p>Agree traffic management.</p> <p>Install new pipes and associated apparatus.</p> <p>Undertake jointing, connection, permanent protection and reinstatement works.</p> |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                  | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                             | Group * | Main Works by Company                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected                                | Design and Material Order Period                        | Notification Period to Attend Site | Works Period Estimate**                              |
|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|------------------------------------|------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                        |                                                                                                              |                                                         |                                    |                                                      |
|                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                        | Inspect and supervise.                                                                                       |                                                         |                                    |                                                      |
|                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                        | Testing and commissioning.                                                                                   |                                                         |                                    |                                                      |
|                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | Dismantle as required or abandon redundant apparatus:- |                                                                                                              |                                                         |                                    |                                                      |
| SGN06<br>(SGN ref N2)<br>Drg<br>B1033200/CD/<br>2700/SGN/033,<br>034 and 070 | <b>Craibstone junction</b><br>Install 450mm diameter intermediate pressure steel main to north of A96 Aberdeen to Inverness Road between existing mains in north verge of A96 at Chapel of Stoneywood and existing mains in north verge of A96 east of new Craibstone Roundabout including crossing of AWPR Northern Leg carriageway at approx. chainage 317+600 and Kirkhill Industrial Estate Link Road at approx. chainage 0+220. | C       |                                                        | Design diversion                                                                                             | 30 <sup>th</sup> April 2013 – 29 <sup>th</sup> Aug 2014 | 3 months                           | 6 <sup>th</sup> Oct 2014 – 27 <sup>th</sup> Mar 2015 |
|                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                        | Review diversion design.                                                                                     |                                                         |                                    |                                                      |
|                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                        | Obtain necessary way leaves and section 37 consents (30 <sup>th</sup> April 2013 – 4 <sup>th</sup> Aug 2014) |                                                         |                                    |                                                      |
|                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                        | Consult and comply with SGN regarding pipeline requirements.                                                 |                                                         |                                    |                                                      |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Group * | Main Works by Company                                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                            | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |                                                                                                                                                                              |                                                                                                                                                                                                                                          |                                  |                                    |                         |
|                                                             | <p>Installation to include 300mm diameter intermediate pressure steel mains as connections between existing mains in the north verge of A96.</p> <p>Install 150mm diameter intermediate pressure steel main to east of AWPR Northern Leg carriageway between new 450mm diameter main at approx. chainage 317+600 and existing main at approx. chainage 317+900.</p> <p>Dismantle as required or abandon redundant 300mm diameter pipelines in north verge of A96 between Chapel of Stonewood and Craibstone Roundabout.</p> <p>Dismantle as required or abandon redundant 150mm diameter pipeline between Chapel of Stonewood and existing main east of AWPR Northern Leg carriageway at approx. chainage 317+900.</p> |         | <p>Agree measures to safeguard existing apparatus with Statutory Undertaker</p> <p>Undertake any required temporary protection works.</p> <p>Provide traffic management.</p> | <p>Agree traffic management.</p> <p>Install new pipes and associated apparatus.</p> <p>Undertake jointing, connection, permanent protection and reinstatement works.</p> <p>Inspect and supervise.</p> <p>Testing and commissioning.</p> |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference   | Location and Description                                                                                                                                                                | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                               |
|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-----------------------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                        |                                                                                                                                                                                         |         |                                                                          |                                                                               |                                  |                                    |                                                                       |
|                                                               |                                                                                                                                                                                         |         | Dismantle as required or abandon redundant apparatus:-                   |                                                                               |                                  |                                    |                                                                       |
| SGN07<br>(SGN ref N/A)<br>Drg<br>B1033200/CD/<br>2700/SGN/071 | <b>Dyce Drive / A96 Junction</b><br>No diversion work currently anticipated to existing intermediate pressure main in existing verges of A96 Aberdeen to Inverness Road and Dyce Drive. | B       | Consult and comply with SGN regarding diversion requirements.            |                                                                               | N/A                              | 2 Weeks                            | 8 Weeks*<br>*should diversion work be required                        |
|                                                               |                                                                                                                                                                                         |         | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               |                                  |                                    |                                                                       |
|                                                               |                                                                                                                                                                                         |         | Undertake any required temporary protection works.                       |                                                                               |                                  |                                    |                                                                       |
|                                                               |                                                                                                                                                                                         |         | Provide traffic management.                                              | Agree traffic management.                                                     |                                  |                                    |                                                                       |
| SGN08<br>(SGN ref N1)<br>Drg                                  | <b>Blackdog Junction</b><br>Install 250mm diameter MPPE pipeline to east of existing A90, and new Wester Hatton Cottages                                                                | C       |                                                                          | Design diversion                                                              | 4 months                         | 3 months                           | 4 <sup>th</sup> May 2015 – 30 <sup>th</sup> June 2016.<br>Phased with |
|                                                               |                                                                                                                                                                                         |         | Review diversion design.                                                 | Review diversion design.                                                      |                                  |                                    |                                                                       |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                      | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                                                                      |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                          |                                                                                                                                                    |                                  |                                    |                                                                                                                              |
| B1033200/CD/2700/SGN/053 to 055 inclusive                   | <p>Access Road carriageways between existing main east of A90 southbound carriageway at approx. chainages 1+670 and 0+700.</p> <p>Install 125mm diameter MPPE pipeline to west of Wester Hatton Access Road between existing 125mm diameter MPPE main in north verge of existing C1C Belhelvie to Wateridgemuir Road (at junction with Wester Hatton to C1C Access Road) and existing main east of A90 southbound carriageway at approx. chainage 0+720 including crossing of A90 carriageway at this location.</p> <p>Dismantle as required or abandon redundant 250mm diameter pipeline in east verge of A90 southbound carriageway between chainages 0+720 and 1+670 and redundant 125mm diameter connection to C1C Belhelvie to</p> |         |                                                                          | Obtain necessary way leaves and section 37 consents (30 <sup>th</sup> April 2013 – 4th August 2014 <u>or</u> To Suit Roads Construction Programme) |                                  |                                    | Roads construction programme, however, SGN advise works shall not be concurrent with any other SGN medium pressure diversion |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Consult and comply with SGN regarding pipeline requirements.             | Procure apparatus for diversion.                                                                                                                   |                                  |                                    |                                                                                                                              |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                                                                    |                                  |                                    |                                                                                                                              |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Undertake any required temporary protection works.                       |                                                                                                                                                    |                                  |                                    |                                                                                                                              |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | Provide traffic management.                                              | Agree traffic management.                                                                                                                          |                                  |                                    |                                                                                                                              |



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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                               | Group * | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                          | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**    |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|---------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|----------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                      |                                                                                                                        |         |                       |                                                                                                                                        |                                  |                                    |                            |
|                                                             | Wateridgemuir Road.<br>Install 63mm diameter MPPE pipeline at south tie-in of existing Blackdog Access Road (Sheet 53) |         |                       | Install new pipes and associated apparatus.                                                                                            |                                  |                                    |                            |
|                                                             |                                                                                                                        |         |                       | Undertake jointing, connection, permanent protection and reinstatement works.                                                          |                                  |                                    |                            |
|                                                             |                                                                                                                        |         |                       | Inspect and supervise.                                                                                                                 |                                  |                                    |                            |
|                                                             |                                                                                                                        |         |                       | Testing and commissioning.                                                                                                             |                                  |                                    |                            |
|                                                             |                                                                                                                        |         |                       | Dismantle as required or abandon redundant apparatus:-<br><br>Date dependant on Roads Construction Programme and Phase Diversion Works |                                  |                                    |                            |
| SGN09                                                       | <b>Newlands</b>                                                                                                        | C       |                       | Design diversion                                                                                                                       | 6 months                         | 3 months                           | 6 <sup>th</sup> April 2015 |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                         | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                                | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**     |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-----------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                      |                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                                          |                                                                                                              |                                  |                                    |                             |
| (SGN ref STR1)<br>Drg<br>B1033200/CD/<br>2700/SGN/060       | Install 300mm diameter high pressure steel pipeline south of AWPR Southern Leg carriageway between existing main west of C30K Hillside to Batchart Road at approx. chainage 0+370 and north of AWPR Southern Leg carriageway at approx. chainage 202+320 including crossing of AWPR at this location.<br><br>Dismantle as required or abandon redundant 300mm diameter pipeline. |         | Review diversion design.                                                 | Review diversion design.                                                                                     |                                  |                                    | – 30 <sup>th</sup> Oct 2015 |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                  |         |                                                                          | Obtain necessary way leaves and section 37 consents (30 <sup>th</sup> April 2013 – 4 <sup>th</sup> Aug 2014) |                                  |                                    |                             |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                  |         | Consult and comply with SGN regarding pipeline requirements.             | Procure apparatus for diversion.                                                                             |                                  |                                    |                             |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                  |         | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                              |                                  |                                    |                             |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                  |         | Undertake any required temporary protection works.                       |                                                                                                              |                                  |                                    |                             |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                  |         | Provide traffic management.                                              | Agree traffic management.                                                                                    |                                  |                                    |                             |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                            | Group * | Main Works by Company                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                 |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|---------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                      |                                                                                                     |         |                                                        |                                                                               |                                  |                                    |                                                         |
|                                                             |                                                                                                     |         |                                                        | Install new pipes and associated apparatus.                                   |                                  |                                    |                                                         |
|                                                             |                                                                                                     |         |                                                        | Undertake jointing, connection, permanent protection and reinstatement works. |                                  |                                    |                                                         |
|                                                             |                                                                                                     |         |                                                        | Inspect and supervise.                                                        |                                  |                                    |                                                         |
|                                                             |                                                                                                     |         |                                                        | Testing and commissioning.                                                    |                                  |                                    |                                                         |
|                                                             |                                                                                                     |         | Dismantle as required or abandon redundant apparatus:- |                                                                               |                                  |                                    |                                                         |
| SGN10<br>(SGN ref S5)<br>Drg                                | <b>Duff's Hill</b><br>Install 200mm diameter intermediate pressure steel pipeline between Hare Moss | C       |                                                        | Design diversion                                                              | 6 months                         | 3 months                           | 2 <sup>nd</sup> Feb 2015<br>– 29 <sup>th</sup> May 2015 |
|                                                             |                                                                                                     |         | Review diversion design.                               | Review diversion design.                                                      |                                  |                                    |                                                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                      | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                                | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                      |                                                                                                                                                                                                                                                                                                                                                                                                                               |         |                                                                          |                                                                                                              |                                  |                                    |                         |
| B1033200/CD/<br>2700/SGN/063                                | (south of AWPR Southern Leg carriageway at approx. chainage 204+580) and The Beeches (north of AWPR Southern Leg carriageway at approx. chainage 204+800) including crossing of AWPR carriageway at approximate chainage 204+610 and associated connections between existing 2 No 150mm diameter intermediate pressure steel mains at either end.<br><br>Dismantle as required or abandon redundant 150mm diameter pipelines. |         |                                                                          | Obtain necessary way leaves and section 37 consents (30 <sup>th</sup> April 2013 – 4 <sup>th</sup> Aug 2014) |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                               |         | Consult and comply with SGN regarding pipeline requirements.             | Procure apparatus for diversion.                                                                             |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                               |         | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                               |         | Undertake any required temporary protection works.                       |                                                                                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                               |         | Provide traffic management.                                              | Agree traffic management.                                                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                               |         |                                                                          | Install new pipes and associated apparatus.                                                                  |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                   | Location and Description                                                                                                                                                                                                                                                                             | Group * | Main Works by Company                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period                                           | Notification Period to Attend Site                | Works Period Estimate**                                                                   |
|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                                                        |                                                                                                                                                                                                                                                                                                      |         |                                                        |                                                                               |                                                                            |                                                   |                                                                                           |
|                                                                                               |                                                                                                                                                                                                                                                                                                      |         |                                                        | Undertake jointing, connection, permanent protection and reinstatement works. |                                                                            |                                                   |                                                                                           |
|                                                                                               |                                                                                                                                                                                                                                                                                                      |         |                                                        | Inspect and supervise.                                                        |                                                                            |                                                   |                                                                                           |
|                                                                                               |                                                                                                                                                                                                                                                                                                      |         |                                                        | Testing and commissioning.                                                    |                                                                            |                                                   |                                                                                           |
|                                                                                               |                                                                                                                                                                                                                                                                                                      |         | Dismantle as required or abandon redundant apparatus:- |                                                                               |                                                                            |                                                   |                                                                                           |
| SGN11<br>(SGN Ref. C12N0750150:1 A of 6)<br>B1033200/CD/2700/ SGN/055 & P246600/2700/SGN/ 001 | <b>Easter Hatton</b><br>Install 250mm diameter medium pressure PE pipeline, approx. length 585m, to east of proposed Easter Hatton Link Road to tie in to new Blackdog Junction diversion reference SGN08 and existing gas pipe at chainage - 2210 (approx).<br><br>Dismantle as required or abandon | C       |                                                        | Design diversion.                                                             | 1 <sup>st</sup> Aug 2013– 1 <sup>st</sup> Aug 2014<br><br>(For Servitudes) | 20 weeks<br><br>(including material order period) | 8 weeks Note – SGN advise that Works shall not be concurrent with any other SGN diversion |
|                                                                                               |                                                                                                                                                                                                                                                                                                      |         | Review diversion design.                               | Review diversion design.                                                      |                                                                            |                                                   |                                                                                           |
|                                                                                               |                                                                                                                                                                                                                                                                                                      |         |                                                        | Obtain necessary servitudes (if required)                                     |                                                                            |                                                   |                                                                                           |
|                                                                                               |                                                                                                                                                                                                                                                                                                      |         | Consult and comply with SGN regarding                  | Procure apparatus for diversion.                                              |                                                                            |                                                   |                                                                                           |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference              | Location and Description                                                                                                              | Group *                                                                       | Main Works by Company  | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                                   |                                                                                                                                       |                                                                               |                        |                                                                               |                                  |                                    |                         |
|                                                                          | redundant 250mm diameter pipeline in east verge of A90 southbound carriageway between Blackdog Junction and chainage - 2210 (approx). |                                                                               | pipeline requirements. |                                                                               |                                  |                                    |                         |
| Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                                                       |                                                                               |                        |                                                                               |                                  |                                    |                         |
| Undertake any required temporary protection works.                       |                                                                                                                                       |                                                                               |                        |                                                                               |                                  |                                    |                         |
| Provide traffic management.                                              |                                                                                                                                       | Agree traffic management.                                                     |                        |                                                                               |                                  |                                    |                         |
|                                                                          |                                                                                                                                       | Install new pipes and associated apparatus.                                   |                        |                                                                               |                                  |                                    |                         |
|                                                                          |                                                                                                                                       | Undertake jointing, connection, permanent protection and reinstatement works. |                        |                                                                               |                                  |                                    |                         |
|                                                                          |                                                                                                                                       | Inspect and supervise.                                                        |                        |                                                                               |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                            | Group * | Main Works by Company                                                                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected      | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                      |                                                                                                                                                                     |         |                                                                                                                                   |                                                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                     |         |                                                                                                                                   | Testing and commissioning.                                                         |                                  |                                    |                         |
|                                                             |                                                                                                                                                                     |         | Dismantle / remove as required. Any open ends to be sealed with appropriate SGN approved cap.                                     |                                                                                    |                                  |                                    |                         |
| SGN12<br>(SGN Ref.NA)<br>P246600/2700/S<br>GN/ 002          | <b>Millden Access Road (between Jandel and Millden Farm)</b><br><br>If required, locally undermine existing gas pipe to lower and slew pipe to lie under new verge. | B       | Set out new road layout and expose existing gas pipe (subject to SGN approved method statement). Advise SGN of relative position. |                                                                                    | N/A                              | 2 weeks                            | 1 week                  |
|                                                             |                                                                                                                                                                     |         |                                                                                                                                   | Inspect position of gas pipe and advise if any adjustment to location is required. |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                      | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Group * | Main Works by Company                                                                                                              | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period                                        | Notification Period to Attend Site            | Works Period Estimate**                                                                                          |
|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                                                                                                                                    |                                                                               |                                                                         |                                               |                                                                                                                  |
|                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | If required, undermine existing gas pipe and lower and slew as required (to SGN approved method statement). Reinstate as required. | Inspect and supervise main contractor during shift of gas pipe (if required). |                                                                         |                                               |                                                                                                                  |
| SGN 13<br>(SGN Ref. C12N0750150:2 of 6 Rev B)<br>P246600/2700/S GN/ 002 & P246600/2700/S GN/ 003 | <b>Balmedie Junction</b><br>Install temporary 250mm diameter medium pressure PE pipe, approx. length 260m to run to the south of the existing Eigie Road and to the west of the existing Old Road. Note: Along the length of the existing Old Road the route, the route shall be chosen to minimise loss of existing trees.<br><br>Install 250mm diameter medium pressure PE pipe, approx. length 620m, to east of proposed Balmedie Junction. To include crossing existing A90 at approximate chainage -1280, thereafter to run under or adjacent | C       |                                                                                                                                    | Design diversion                                                              | 1 <sup>st</sup> Aug 2013 – 1 <sup>st</sup> Aug 2014<br>(For Servitudes) | 20 weeks<br>(including material order period) | 12 weeks<br><br>Note – SGN advise that Works shall not be concurrent with any other diversion other than SGN 14. |
|                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Review diversion design.                                                                                                           | Review diversion design.                                                      |                                                                         |                                               |                                                                                                                  |
|                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |                                                                                                                                    | Obtain necessary servitudes (if required)                                     |                                                                         |                                               |                                                                                                                  |
|                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Consult and comply with SGN regarding pipeline requirements.                                                                       | Procure apparatus for diversion.                                              |                                                                         |                                               |                                                                                                                  |
|                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         | Agree measures to safeguard existing apparatus with Statutory Undertaker                                                           |                                                                               |                                                                         |                                               |                                                                                                                  |



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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Group * | Main Works by Company                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                                                                                                                                           | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                         |                                  |                                    |                         |
|                                                             | <p>to proposed footpath/cyclepath to Balmedie East Roundabout / Balmedie Detention Pond (under footpath), thereafter to cross realigned Eigie Road . To run in the east verge of the realigned Old Road and tie into the existing pipe in Old Road. At the crossing of the proposed culvert; a minimum cover (between top of culvert and finished ground level) of 600mm shall be provided. If this cannot be provided the gas pipe shall be placed under the culvert.</p> <p>Dismantle as required or abandon redundant 250mm diameter pipeline (currently in west verge of A90 / crossing at approximate chainage -1050 / east verge off A90 / south verge of Eigie Road / east verge of Old Road).</p> |         | <p>Undertake any required temporary protection works.</p> <p>Provide traffic management.</p> | <p>Agree traffic management.</p> <p>Install new pipes (including temporary diversion but excluding the permanent diversion to the north of the realignment Eigie Road) and associated apparatus.</p> <p>Upon completion of the realigned Old Road: install permanent diversion and switch from the Temporary Diversion to the Permanent</p> <p>Undertake jointing, connection, permanent protection</p> |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                           | Location and Description                                                                                                                                                                                                                                                                                                                                        | Group * | Main Works by Company                                                                         | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period                                        | Notification Period to Attend Site         | Works Period Estimate**                                                                                      |
|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                                                                |                                                                                                                                                                                                                                                                                                                                                                 |         |                                                                                               |                                                                               |                                                                         |                                            |                                                                                                              |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                 |         |                                                                                               | and reinstatement works.                                                      |                                                                         |                                            |                                                                                                              |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                 |         |                                                                                               | Inspect and supervise.                                                        |                                                                         |                                            |                                                                                                              |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                 |         |                                                                                               | Testing and commissioning.                                                    |                                                                         |                                            |                                                                                                              |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                 |         | Dismantle / remove as required. Any open ends to be sealed with appropriate SGN approved cap. |                                                                               |                                                                         |                                            |                                                                                                              |
| SGN 14A/B/C/D<br>(SGN Ref. C12N0750140:2 of 6 Rev C)<br>P246600/2700/SGN/ 002 & P246600/2700/SGN/ 003 | <b>Southfolds</b><br>Part A (Temporary Diversion): Install 32mm diameter medium pressure PE pipe, approx. length 206m, to west of existing A90 to tie into existing pipe at Southfolds. Note – Subject to construction sequence (that is, Part D completed ahead of Part A): this temporary diversion may not be required.<br>Part B (Lowering and slewing): If | B       |                                                                                               | Design diversion                                                              | 1 <sup>st</sup> Aug 2013 – 1 <sup>st</sup> Aug 2014<br>(For Servitudes) | 20 weeks (including material order period) | 12 weeks<br>Note – SGN advise that works shall not be concurrent with any other diversion, other than SGN13. |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                 |         | Review diversion design.                                                                      | Review diversion design.                                                      |                                                                         |                                            |                                                                                                              |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                 |         | Consult and comply with SGN regarding pipeline requirements.                                  | Obtain necessary servitudes                                                   |                                                                         |                                            |                                                                                                              |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                 |         | Agree measures to safeguard existing apparatus with Statutory Undertaker                      |                                                                               |                                                                         |                                            |                                                                                                              |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Group * | Main Works by Company                                                                                                                                                                                                                                 | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                                                                                                                                                               | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                             |                                  |                                    |                         |
|                                                             | <p>required, locally undermine existing gas pipe to lower and slew pipe to lie under verge of proposed Southfolds Access Road (or otherwise agreed with SGN).</p> <p>Part C (Diversion): Install 32mm diameter medium pressure PE pipe, approx. length 30m, to west of proposed Southfolds Access Road up to "Almardo" property.</p> <p>Part D (Diversion): Install 63mm diameter medium pressure PE pipe, approx. length 410m, to lie in east verge of Millden Access and south verge of Southfolds Access with connections as shown to existing gas pipes</p> <p>(Dismantle as required or abandonment of existing pipe to form part of diversion reference SGN13)</p> |         | <p>Provide traffic management.</p> <p>Part B: Set out new road layout and expose existing gas pipe (subject to SGN approved method statement). Advise SGN of relative position.</p> <p>Part B: If required, undermine existing gas pipe and lower</p> | <p>Agree traffic management.</p> <p>Procure apparatus for diversion</p> <p>Install new pipes and associated apparatus</p> <p>Undertake jointing, connection, permanent protection and reinstatement works</p> <p>Part B: Inspect position of gas pipe and advise if any adjustment to location is required.</p> <p>Part B: Inspect and supervise main contractor during</p> |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference           | Location and Description                                                                                                                                                                                                                                                                                                                   | Group * | Main Works by Company                                                                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected    | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                                |                                                                                                                                                                                                                                                                                                                                            |         |                                                                                                                                   |                                                                                  |                                  |                                    |                         |
|                                                                       |                                                                                                                                                                                                                                                                                                                                            |         | and slew as required (to SGN approved method statement). Reinstatement as required.                                               | shift of gas pipe (if required).                                                 |                                  |                                    |                         |
|                                                                       |                                                                                                                                                                                                                                                                                                                                            |         |                                                                                                                                   | Testing and commissioning                                                        |                                  |                                    |                         |
| SGN15<br>(SGN Ref. C12N0750150:3 of 6 Rev C)<br>P246600/2700/SGN/ 006 | <b>B977 Dyce Road</b><br>Provide reinforced concrete protection slab over existing gas pipe at proposed junction between the B977 realignment and the existing B977 Dyce Road.<br><br>Note – Protection slab may be omitted if the existing gas pipe is at sufficient depth: subject to agreement with local SGN plant protection officer. | B       | Set out new road layout and expose existing gas pipe (subject to SGN approved method statement). Advise SGN of relative position. |                                                                                  | NA                               | 2 weeks                            | 4 weeks                 |
|                                                                       |                                                                                                                                                                                                                                                                                                                                            |         |                                                                                                                                   | Inspect position of gas pipe and advise if concrete protection slab is required. |                                  |                                    |                         |
|                                                                       |                                                                                                                                                                                                                                                                                                                                            |         | Construct reinforced concrete protection slab to SGN requirements (if required).                                                  |                                                                                  |                                  |                                    |                         |
| SGN16                                                                 | <b>Balmedie North</b>                                                                                                                                                                                                                                                                                                                      | C       |                                                                                                                                   | Design diversion.                                                                | 1 <sup>st</sup> Aug 2013         | 20 weeks                           | 6 weeks                 |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference  | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period                   | Notification Period to Attend Site | Works Period Estimate**                                                            |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------------------------|------------------------------------|------------------------------------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |                                                                          |                                                                               |                                                    |                                    |                                                                                    |
| (SGN Ref. C12N0750150:3 of 6 Rev C)<br>P246600/2700/SGN/ 004 | Install 250mm diameter medium pressure PE pipe, approx. length 132m, to cross realigned A90 (at approximate chainage 300) and at sufficient depth to allow existing A90 and existing B977 to be grubbed up (for landscape planting). Note subject to finished road levels / final landscaping requirements suiting the existing gas pipe and, with SGN's agreement, this diversion may be omitted. Alternatively (if cover depth is insufficient) a reinforced concrete protection slab may be provided out with the realigned A90. |         | Review diversion design.                                                 | Review diversion design.                                                      | – 1 <sup>st</sup> Aug 2014<br><br>(For Servitudes) | (including material order period)  | Note – SGN advise that works shall not be concurrent with any other SGN diversion. |
|                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |                                                                          | Obtain necessary servitudes (if required)                                     |                                                    |                                    |                                                                                    |
|                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         | Consult and comply with SGN regarding pipeline requirements.             | Procure apparatus for diversion.                                              |                                                    |                                    |                                                                                    |
|                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               |                                                    |                                    |                                                                                    |
|                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         | Undertake any required temporary protection works.                       |                                                                               |                                                    |                                    |                                                                                    |
|                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         | Provide traffic management.                                              | Agree traffic management.                                                     |                                                    |                                    |                                                                                    |
|                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |                                                                          | Install new pipes and associated apparatus.                                   |                                                    |                                    |                                                                                    |
|                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |                                                                          | Undertake jointing, connection,                                               |                                                    |                                    |                                                                                    |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference           | Location and Description                                                                                                                                                                                                                                                                                                                 | Group * | Main Works by Company                                                                         | Works by Statutory Undertakers', Private Apparatus owners and others affected    | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                                |                                                                                                                                                                                                                                                                                                                                          |         |                                                                                               |                                                                                  |                                  |                                    |                         |
|                                                                       |                                                                                                                                                                                                                                                                                                                                          |         |                                                                                               | permanent protection and reinstatement works.                                    |                                  |                                    |                         |
|                                                                       |                                                                                                                                                                                                                                                                                                                                          |         |                                                                                               | Inspect and supervise.                                                           |                                  |                                    |                         |
|                                                                       |                                                                                                                                                                                                                                                                                                                                          |         |                                                                                               | Testing and commissioning.                                                       |                                  |                                    |                         |
|                                                                       |                                                                                                                                                                                                                                                                                                                                          |         | Dismantle / remove as required. Any open ends to be sealed with appropriate SGN approved cap. |                                                                                  |                                  |                                    |                         |
| SGN17<br>(SGN Ref. C12N0750150:3 of 6 Rev C)<br>P246600/2700/SGN/ 004 | <b>Balmedie Link Road (South)</b><br>Provide reinforced concrete protection slab over existing gas pipe under new Balmedie Link Road between approximate chainage 50 and 90.<br><br>Note – Protection slab may be omitted if the existing gas pipe is at sufficient depth: subject to agreement with local SGN plant protection officer. | B       | Set out new road layout and expose existing gas pipe. Advise SGN of relative position.        |                                                                                  | NA                               | 2 weeks                            | 4 weeks                 |
|                                                                       |                                                                                                                                                                                                                                                                                                                                          |         |                                                                                               | Inspect position of gas pipe and advise if concrete protection slab is required. |                                  |                                    |                         |
|                                                                       |                                                                                                                                                                                                                                                                                                                                          |         | Construct reinforced concrete protection slab to                                              |                                                                                  |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference            | Location and Description                                                                                                                                                                                                                                                                                                      | Group * | Main Works by Company                                                                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected    | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                                 |                                                                                                                                                                                                                                                                                                                               |         |                                                                                                                                   |                                                                                  |                                  |                                    |                         |
|                                                                        |                                                                                                                                                                                                                                                                                                                               |         | SGN requirements (if required).                                                                                                   |                                                                                  |                                  |                                    |                         |
| SGN18<br>(SGN Ref. C12N0750150:3 of 6 Rev C)<br>P246600/2700/S GN/ 007 | <b>Balmedie Link Road (North)</b><br>Provide reinforced concrete protection slab over existing gas pipe under new Balmedie Link Road at approximate chainage 430.<br><br>Note – Protection slab may be omitted if the existing gas pipe is at sufficient depth: subject to agreement with local SGN plant protection officer. | B       | Set out new road layout and expose existing gas pipe (subject to SGN approved method statement). Advise SGN of relative position. |                                                                                  | NA                               | 2 weeks                            | 4 weeks                 |
|                                                                        |                                                                                                                                                                                                                                                                                                                               |         |                                                                                                                                   | Inspect position of gas pipe and advise if concrete protection slab is required. |                                  |                                    |                         |
|                                                                        |                                                                                                                                                                                                                                                                                                                               |         | Construct reinforced concrete protection slab to SGN requirements (if required).                                                  |                                                                                  |                                  |                                    |                         |
| SGN19<br>(SGN Ref. TBC)<br>P246600/2700/S GN/ 007                      | <b>South Orrock Underpass Access</b><br>Provide reinforced concrete protection slab over existing gas pipe at new junction with South Orrock Underpass access road                                                                                                                                                            | B       | Set out new road layout and expose existing gas pipe (subject to SGN approved method statement). Advise SGN of relative           |                                                                                  |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference             | Location and Description                                                                                                                                                                                                                                                                                                           | Group * | Main Works by Company                                                            | Works by Statutory Undertakers', Private Apparatus owners and others affected    | Design and Material Order Period                                            | Notification Period to Attend Site                | Works Period Estimate**                                                                           |
|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                                  |                                                                                                                                                                                                                                                                                                                                    |         |                                                                                  |                                                                                  |                                                                             |                                                   |                                                                                                   |
|                                                                         | and existing A90.<br><br>Note – Protection slab may be omitted if the existing gas pipe is at sufficient depth: subject to agreement with local SGN plant protection officer.                                                                                                                                                      |         | position.                                                                        |                                                                                  |                                                                             |                                                   |                                                                                                   |
|                                                                         |                                                                                                                                                                                                                                                                                                                                    |         |                                                                                  | Inspect position of gas pipe and advise if concrete protection slab is required. |                                                                             |                                                   |                                                                                                   |
|                                                                         |                                                                                                                                                                                                                                                                                                                                    |         | Construct reinforced concrete protection slab to SGN requirements (if required). |                                                                                  |                                                                             |                                                   |                                                                                                   |
| SGN20A<br>(SGN Ref. C12N0750150: 5 of 6 Rev B)<br>P246600/2700/SGN/ 014 | <b>Rashierieve to Cairnie Law (Ruins)</b><br><br>Install 180mm diameter medium pressure PE pipe, approx. length 175m, from Rashierieve to south of Cairnie Law (Ruins) .<br><br>Crossing the proposed A975 Realignment<br><br>Dismantle as required or abandon redundant 180mm diameter pipeline (currently in east verge of A90). | C       |                                                                                  | Design diversion                                                                 | 1 <sup>st</sup> Aug 2013 – 1 <sup>st</sup> Aug 2014<br><br>(For Servitudes) | 20 weeks<br><br>(including material order period) | 4 weeks<br><br>Note – SGN advise that works shall not be concurrent with any other SGN diversion. |
|                                                                         |                                                                                                                                                                                                                                                                                                                                    |         | Review diversion design.                                                         | Review diversion design.                                                         |                                                                             |                                                   |                                                                                                   |
|                                                                         |                                                                                                                                                                                                                                                                                                                                    |         |                                                                                  | Obtain necessary servitudes                                                      |                                                                             |                                                   |                                                                                                   |
|                                                                         |                                                                                                                                                                                                                                                                                                                                    |         | Consult and comply with SGN regarding pipeline requirements.                     | Procure apparatus for diversion                                                  |                                                                             |                                                   |                                                                                                   |
|                                                                         |                                                                                                                                                                                                                                                                                                                                    |         | Agree measures to safeguard existing apparatus with Statutory Undertaker.        |                                                                                  |                                                                             |                                                   |                                                                                                   |



## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference      | Location and Description                                                                                                                                              | Group * | Main Works by Company                                                                         | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period                                        | Notification Period to Attend Site            | Works Period Estimate**                                         |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                           |                                                                                                                                                                       |         |                                                                                               |                                                                               |                                                                         |                                               |                                                                 |
|                                                                  |                                                                                                                                                                       |         | Undertake any required temporary protection works.                                            |                                                                               |                                                                         |                                               |                                                                 |
|                                                                  |                                                                                                                                                                       |         | Provide traffic management.                                                                   | Agree traffic management.                                                     |                                                                         |                                               |                                                                 |
|                                                                  |                                                                                                                                                                       |         |                                                                                               | Install new pipes and associated apparatus                                    |                                                                         |                                               |                                                                 |
|                                                                  |                                                                                                                                                                       |         |                                                                                               | Undertake jointing, connection, permanent protection and reinstatement works. |                                                                         |                                               |                                                                 |
|                                                                  |                                                                                                                                                                       |         |                                                                                               | Testing and commissioning                                                     |                                                                         |                                               |                                                                 |
|                                                                  |                                                                                                                                                                       |         | Dismantle / remove as required. Any open ends to be sealed with appropriate SGN approved cap. |                                                                               |                                                                         |                                               |                                                                 |
| SGN20B<br>(SGN Ref. C12N0750150: 5 of 6 Rev B)<br>P246600/2700/S | <b>A90 (south of) Blairythan Smithy</b><br>Install 180mm diameter medium pressure PE pipe, approx. length 315m, from existing A90 (at approx. Ch. 5140 of propped A90 | B       |                                                                                               | Design diversion                                                              | 1 <sup>st</sup> Aug 2013 – 1 <sup>st</sup> Aug 2014<br>(For Servitudes) | 20 weeks<br>(including material order period) | 4 weeks<br>Note – SGN advise that works shall not be concurrent |
|                                                                  |                                                                                                                                                                       |         | Review diversion design.                                                                      | Review diversion design.                                                      |                                                                         |                                               |                                                                 |
|                                                                  |                                                                                                                                                                       |         |                                                                                               | Obtain necessary                                                              |                                                                         |                                               |                                                                 |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference          | Location and Description                                                                                                                                                                  | Group * | Main Works by Company                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**       |
|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                               |                                                                                                                                                                                           |         |                                                                           |                                                                               |                                  |                                    |                               |
| GN/ 013,<br>P246600/2700/S<br>GN/ 014 &<br>P246600/2700/S<br>GN/ 015 | to south of Blairythan Smithy).<br>Crossing the proposed A90 at approx. Ch. 5350.<br>Dismantle as required or abandon redundant 180mm diameter pipeline (currently in east verge of A90). |         |                                                                           | servitudes                                                                    |                                  |                                    | with any other SGN diversion. |
|                                                                      |                                                                                                                                                                                           |         | Consult and comply with SGN regarding pipeline requirements.              | Procure apparatus for diversion                                               |                                  |                                    |                               |
|                                                                      |                                                                                                                                                                                           |         | Agree measures to safeguard existing apparatus with Statutory Undertaker. |                                                                               |                                  |                                    |                               |
|                                                                      |                                                                                                                                                                                           |         | Undertake any required temporary protection works.                        |                                                                               |                                  |                                    |                               |
|                                                                      |                                                                                                                                                                                           |         | Provide traffic management.                                               | Agree traffic management.                                                     |                                  |                                    |                               |
|                                                                      |                                                                                                                                                                                           |         |                                                                           | Install new pipes and associated apparatus                                    |                                  |                                    |                               |
|                                                                      |                                                                                                                                                                                           |         |                                                                           | Undertake jointing, connection, permanent protection and reinstatement works. |                                  |                                    |                               |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference            | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Group * | Main Works by Company                                                                         | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period                                        | Notification Period to Attend Site            | Works Period Estimate**                                                                           |
|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |                                                                                               |                                                                               |                                                                         |                                               |                                                                                                   |
|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |                                                                                               | Testing and commissioning                                                     |                                                                         |                                               |                                                                                                   |
|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         | Dismantle / remove as required. Any open ends to be sealed with appropriate SGN approved cap. |                                                                               |                                                                         |                                               |                                                                                                   |
| SGN21<br>(SGN Ref. C12N0750150: 4 of 6 Rev B)<br>P246600/2700/SGN/ 016 | <b>Existing Mill of Foveran Access Road</b><br><br>Install 32mm diameter medium pressure PE pipe, approx. length 388m, from existing gas main (180mm) to Mill of Foveran to lie adjacent to existing pipe except where the route crosses the proposed A90 dual carriageway at which it shall be routed to the south of existing pipe (to be placed in the south verge of the existing Foveran Access Road).<br><br>Dismantle as required or abandon redundant 32mm diameter pipeline. | B       |                                                                                               | Design diversion                                                              | 1 <sup>st</sup> Aug 2013 – 1 <sup>st</sup> Aug 2014<br>(For Servitudes) | 20 weeks<br>(including material order period) | 6 weeks<br><br>Note – SGN advise that works shall not be concurrent with any other SGN diversion. |
|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |                                                                                               | Review diversion design.                                                      |                                                                         |                                               |                                                                                                   |
|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |                                                                                               | Obtain necessary servitudes (if required)                                     |                                                                         |                                               |                                                                                                   |
|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |                                                                                               | Consult and comply with SGN regarding pipeline requirements.                  |                                                                         |                                               |                                                                                                   |
|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |                                                                                               | Agree measures to safeguard existing apparatus with Statutory Undertaker.     |                                                                         |                                               |                                                                                                   |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group * | Main Works by Company                                                                         | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|---------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                      |                          |         |                                                                                               |                                                                               |                                  |                                    |                         |
|                                                             |                          |         | Undertake any required temporary protection works.                                            |                                                                               |                                  |                                    |                         |
|                                                             |                          |         | Provide traffic management.                                                                   | Agree traffic management.                                                     |                                  |                                    |                         |
|                                                             |                          |         |                                                                                               | Install new pipes and associated apparatus.                                   |                                  |                                    |                         |
|                                                             |                          |         |                                                                                               | Undertake jointing, connection, permanent protection and reinstatement works. |                                  |                                    |                         |
|                                                             |                          |         |                                                                                               | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                          |         |                                                                                               | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                          |         | Dismantle / remove as required. Any open ends to be sealed with appropriate SGN approved cap. |                                                                               |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference            | Location and Description                                                                                                                                                                                                                                                                                   | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period                                        | Notification Period to Attend Site            | Works Period Estimate**                                                                       |
|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                                 |                                                                                                                                                                                                                                                                                                            |         |                                                                          |                                                                               |                                                                         |                                               |                                                                                               |
| SGN22<br>(SGN Ref. C12N0750150: 4 of 6 Rev A)<br>P246600/2700/SGN/ 016 | <b>Foveran Overbridge Access Road</b><br>Install 180mm diameter medium pressure PE pipe, approx length 70m, to east of existing pipe.<br>Dismantle as required or abandon redundant 180mm diameter pipeline (in east verge of existing A90). Note – existing pipe may be located within a cast iron pipe). | C       |                                                                          | Design diversion                                                              | 1 <sup>st</sup> Aug 2013 – 1 <sup>st</sup> Aug 2014<br>(For Servitudes) | 20 weeks<br>(including material order period) | 4 weeks<br>Note – SGN advise that works shall not be concurrent with any other SGN diversion. |
|                                                                        |                                                                                                                                                                                                                                                                                                            |         | Review diversion design.                                                 | Review diversion design.                                                      |                                                                         |                                               |                                                                                               |
|                                                                        |                                                                                                                                                                                                                                                                                                            |         |                                                                          | Obtain necessary servitudes                                                   |                                                                         |                                               |                                                                                               |
|                                                                        |                                                                                                                                                                                                                                                                                                            |         | Consult and comply with SGN regarding pipeline requirements.             | Procure apparatus for diversion                                               |                                                                         |                                               |                                                                                               |
|                                                                        |                                                                                                                                                                                                                                                                                                            |         | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               |                                                                         |                                               |                                                                                               |
|                                                                        |                                                                                                                                                                                                                                                                                                            |         | Undertake any required temporary protection works.                       |                                                                               |                                                                         |                                               |                                                                                               |
|                                                                        |                                                                                                                                                                                                                                                                                                            |         | Provide traffic management.                                              | Agree traffic management.                                                     |                                                                         |                                               |                                                                                               |
|                                                                        |                                                                                                                                                                                                                                                                                                            |         |                                                                          | Install new pipes and associated apparatus                                    |                                                                         |                                               |                                                                                               |
|                                                                        |                                                                                                                                                                                                                                                                                                            |         |                                                                          | Undertake jointing, connection, permanent protection and reinstatement works  |                                                                         |                                               |                                                                                               |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference            | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Group * | Main Works by Company                                                                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                    | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |                                                                                                                                   |                                                                                                                                  |                                  |                                    |                         |
|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         | Dismantle / remove as required. Any open ends to be sealed with appropriate SGN approved cap.                                     | Testing and commissioning                                                                                                        |                                  |                                    |                         |
| SGN23<br>(SGN Ref. C12N0750150: 4 of 6 Rev A)<br>P246600/2700/SGN/ 016 | <p><b>Foveran School Supply at proposed junction for Foveran Overbridge Access Road with existing A90</b></p> <p>Provide reinforced concrete protection slab over existing gas pipe under proposed Foveran Overbridge Access Road.</p> <p>Note – Protection slab may be omitted if the existing gas pipe is at sufficient depth: subject to agreement with local SGN plant protection officer. Alternatively, subject to agreement with SGN: locally undermine existing gas pipe to lower and slew pipe to increase cover depth to SGN requirements.</p> | B       | Set out new road layout and expose existing gas pipe (subject to SGN approved method statement). Advise SGN of relative position. |                                                                                                                                  | NA                               | 2 weeks                            | 4 weeks                 |
|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |                                                                                                                                   | Inspect position of gas pipe and advise if concrete protection slab is required or if existing pipe is to be locally undermined. |                                  |                                    |                         |
|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         | Construct reinforced concrete protection slab to SGN requirements (if required).                                                  | If required, inspect and supervise main contractor during undermining / lowering / slewing of                                    |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference      | Location and Description                                                                                                                                                                                                                                                                                                                                      | Group * | Main Works by Company                                                                                                             | Works by Statutory Undertakers', Private Apparatus owners and others affected    | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                           |                                                                                                                                                                                                                                                                                                                                                               |         |                                                                                                                                   |                                                                                  |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                               |         | Alternatively undermine, lower and slew as required (to SGN approved method statement). Reinstate as required.                    | gas pipe.                                                                        |                                  |                                    |                         |
| SGN24<br>(SGN Ref.<br>C12N0750150b)<br>P246600/2700/S<br>GN/ 017 | <b>Pitmillan Road Overbridge Access</b><br>Provide reinforced concrete protection slab over existing gas pipe under proposed Pitmillan Road Overbridge Access Road at junction with existing A90.<br><br>Note – Protection slab may be omitted if the existing gas pipe is at sufficient depth: subject to agreement with local SGN plant protection officer. | B       | Set out new road layout and expose existing gas pipe (subject to SGN approved method statement). Advise SGN of relative position. |                                                                                  | NA                               | 2 weeks                            | 4 weeks                 |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                               |         |                                                                                                                                   | Inspect position of gas pipe and advise if concrete protection slab is required. |                                  |                                    |                         |
|                                                                  |                                                                                                                                                                                                                                                                                                                                                               |         | Construct reinforced concrete protection slab to SGN requirements (if required).                                                  |                                                                                  |                                  |                                    |                         |
| SGN25                                                            | <b>B9000 East Realignment</b>                                                                                                                                                                                                                                                                                                                                 | C       |                                                                                                                                   | Design diversion.                                                                | 1 <sup>st</sup> Aug 2013         | 20 weeks                           | 6 weeks                 |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br><br>Drawing Reference | Location and Description                                                                                                                                                                                      | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period                   | Notification Period to Attend Site | Works Period Estimate**                                                            |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------------------------|------------------------------------|------------------------------------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                          |                                                                                                                                                                                                               |         |                                                                          |                                                                               |                                                    |                                    |                                                                                    |
| (SGN Ref. C12N0750150a: Rev A)<br><br>P246600/2700/S GN/ 018    | <b>(including Tarty Road Realignment (South))</b><br><br>Install 125mm diameter medium pressure PE pipe, approx. length 240m, to run in adjacent field, parallel to existing pipe in verge of existing B9000. |         | Review diversion design.                                                 | Review diversion design.                                                      | – 1 <sup>st</sup> Aug 2014<br><br>(For Servitudes) | (including material order period)  | Note – SGN advise that works shall not be concurrent with any other SGN diversion. |
|                                                                 |                                                                                                                                                                                                               |         |                                                                          | Obtain necessary servitudes                                                   |                                                    |                                    |                                                                                    |
|                                                                 |                                                                                                                                                                                                               |         | Consult and comply with SGN regarding pipeline requirements.             | Procure apparatus for diversion.                                              |                                                    |                                    |                                                                                    |
|                                                                 |                                                                                                                                                                                                               |         | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               |                                                    |                                    |                                                                                    |
|                                                                 |                                                                                                                                                                                                               |         | Undertake any required temporary protection works.                       |                                                                               |                                                    |                                    |                                                                                    |
|                                                                 |                                                                                                                                                                                                               |         | Provide traffic management.                                              | Agree traffic management.                                                     |                                                    |                                    |                                                                                    |
|                                                                 |                                                                                                                                                                                                               |         |                                                                          | Install new pipes and associated apparatus.                                   |                                                    |                                    |                                                                                    |
|                                                                 |                                                                                                                                                                                                               |         |                                                                          | Undertake jointing, connection, permanent protection and reinstatement works. |                                                    |                                    |                                                                                    |



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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                      | Location and Description                                                                                                                                                                                                                                                                                                                                                | Group * | Main Works by Company                                                                         | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period                                        | Notification Period to Attend Site            | Works Period Estimate**                                                                            |
|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                                                           |                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                                               |                                                                               |                                                                         |                                               |                                                                                                    |
|                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                                               | Inspect and supervise.                                                        |                                                                         |                                               |                                                                                                    |
|                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                                               | Testing and commissioning.                                                    |                                                                         |                                               |                                                                                                    |
|                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                         |         | Dismantle / remove as required. Any open ends to be sealed with appropriate SGN approved cap. |                                                                               |                                                                         |                                               |                                                                                                    |
| SGN 26                                                                                           | <b>Tarty Road Realignment (South)</b><br>NOT USED (Refer to SGN25)                                                                                                                                                                                                                                                                                                      | -       | -                                                                                             | -                                                                             |                                                                         |                                               |                                                                                                    |
| SGN27<br>(SGN Ref. C12N0750150: 6 of 6 Rev B)<br>P246600/2700/S GN/ 018 & P246600/2700/S GN/ 019 | <b>Tipperty Junction / Fountainbleau</b><br>Install 180mm diameter medium pressure PE pipe, approx. length 865m, to lie in west verge of B9000 West Realignment / to east of Fountainbleau Farm / to west of B9000 West Realignment / crossing B9000 West and existing / realigned A90 / to tie in existing pipe at Tarty Road.<br><br>Dismantle as required or abandon | C       |                                                                                               | Design diversion                                                              | 1 <sup>st</sup> Aug 2013 – 1 <sup>st</sup> Aug 2014<br>(For Servitudes) | 20 weeks<br>(including material order period) | 10 weeks<br><br>Note – SGN advise that works shall not be concurrent with any other SGN diversion. |
|                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                         |         | Review diversion design                                                                       | Review diversion design                                                       |                                                                         |                                               |                                                                                                    |
|                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                         |         |                                                                                               | Obtain necessary servitudes                                                   |                                                                         |                                               |                                                                                                    |
|                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                         |         | Consult and comply with SGN regarding pipeline requirements.                                  | Procure apparatus for diversion                                               |                                                                         |                                               |                                                                                                    |
|                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                         |         | Agree measures to safeguard existing apparatus with                                           |                                                                               |                                                                         |                                               |                                                                                                    |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                       | Group *                                                                                       | Main Works by Company                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period                  | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------|------------------------------------|-------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                      |                                                                |                                                                                               |                                                                              |                                                                               |                                                   |                                    |                         |
|                                                             | redundant 180mm diameter pipeline.                             |                                                                                               | Statutory Undertaker                                                         |                                                                               |                                                   |                                    |                         |
|                                                             |                                                                | Undertake any required temporary protection works.                                            |                                                                              |                                                                               |                                                   |                                    |                         |
|                                                             |                                                                | Provide traffic management.                                                                   | Agree traffic management.                                                    |                                                                               |                                                   |                                    |                         |
|                                                             |                                                                |                                                                                               | Install new pipes and associated apparatus                                   |                                                                               |                                                   |                                    |                         |
|                                                             |                                                                |                                                                                               | Undertake jointing, connection, permanent protection and reinstatement works |                                                                               |                                                   |                                    |                         |
|                                                             |                                                                |                                                                                               | Testing and commissioning                                                    |                                                                               |                                                   |                                    |                         |
|                                                             |                                                                | Dismantle / remove as required. Any open ends to be sealed with appropriate SGN approved cap. |                                                                              |                                                                               |                                                   |                                    |                         |
| SGN28<br>(SGN Ref.)                                         | <b>Tarty Road Realignment</b><br>Install 180mm diameter medium | C                                                                                             |                                                                              | Design diversion                                                              | 1 <sup>st</sup> Aug 2013<br>– 1 <sup>st</sup> Aug | 20 weeks<br>(including             | 8 weeks<br>Note – SGN   |
|                                                             | Review diversion design                                        | Review diversion design                                                                       |                                                                              |                                                                               |                                                   |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                               | Location and Description                                                                                                                                             | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                                                 |
|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------------------------------------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                                                    |                                                                                                                                                                      |         |                                                                          |                                                                               |                                  |                                    |                                                                         |
| C12N0750150: 6 of 6 Rev B)<br>P246600/2700/S GN/ 018 Rev A & P246600/2700/S GN/ 019 Rev A | pressure PE pipe, approx. length 600m, to lie to east of proposed Tarty Road Realignment.<br><br>Dismantle as required or abandon redundant 180mm diameter pipeline. |         |                                                                          | Obtain necessary servitudes                                                   | 2014<br>(For Servitudes)         | material order period)             | advise that works shall not be concurrent with any other SGN diversion. |
|                                                                                           |                                                                                                                                                                      |         | Consult and comply with SGN regarding pipeline requirements.             | Procure apparatus for diversion                                               |                                  |                                    |                                                                         |
|                                                                                           |                                                                                                                                                                      |         | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               |                                  |                                    |                                                                         |
|                                                                                           |                                                                                                                                                                      |         | Undertake any required temporary protection works.                       |                                                                               |                                  |                                    |                                                                         |
|                                                                                           |                                                                                                                                                                      |         | Provide traffic management.                                              | Agree traffic management.                                                     |                                  |                                    |                                                                         |
|                                                                                           |                                                                                                                                                                      |         |                                                                          | Install new pipes and associated apparatus                                    |                                  |                                    |                                                                         |
|                                                                                           |                                                                                                                                                                      |         |                                                                          | Undertake jointing, connection, permanent protection and reinstatement works  |                                  |                                    |                                                                         |
|                                                                                           |                                                                                                                                                                      |         |                                                                          | Testing and commissioning                                                     |                                  |                                    |                                                                         |
|                                                                                           |                                                                                                                                                                      |         | Dismantle / remove                                                       |                                                                               |                                  |                                    |                                                                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group * | Main Works by Company                                                      | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|---------|----------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scotland Gas Networks Ltd (SGN)</b>                      |                          |         |                                                                            |                                                                               |                                  |                                    |                         |
|                                                             |                          |         | as required. Any open ends to be sealed with appropriate SGN approved cap. |                                                                               |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference    | Location and Description                                                                                                                                                                                                                                                                                                                 | Group * | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site                                                               | Works Period Estimate** |
|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------------------------------------------------------|-------------------------|
| <b>Scottish Water Sewer</b>                                    |                                                                                                                                                                                                                                                                                                                                          |         |                                                                                                                                                              |                                                                               |                                  |                                                                                                  |                         |
| SWS01<br>(SWW ref SWD01)<br>Drg<br>B1033200/CD/<br>2700/SW/018 | <b>North of River Dee Crossing</b><br><br>Install 2 x 450mm DI combined sewers and associated equipment including chambers and overflow weirs etc. as required as diversion to existing 450mm concrete main across AWPR carriageway at approx. chainage 102+410m.<br><br>Dismantle as required or abandon redundant 450mm concrete pipe. | B       |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | Access Transfer Certificate (ATC) - 1 week<br><br>Planned shut down of network - 22 working days | 20 weeks                |
|                                                                |                                                                                                                                                                                                                                                                                                                                          |         | Review diversion design.                                                                                                                                     | Review diversion design.                                                      |                                  |                                                                                                  |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                          |         | Consult and comply with SWW regarding diversion requirements.                                                                                                | Procure apparatus for diversion.                                              |                                  |                                                                                                  |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                          |         | Agree measures to safeguard existing apparatus with Statutory Undertaker                                                                                     |                                                                               |                                  |                                                                                                  |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                          |         | Undertake any required temporary protection works.                                                                                                           |                                                                               |                                  |                                                                                                  |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                          |         | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Install new pipes and associated apparatus.                                   |                                  |                                                                                                  |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference     | Location and Description                                                                                                                                                                                                                                               | Group * | Main Works by Company                                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site        | Works Period Estimate** |
|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------|-------------------------|
| <b>Scottish Water Sewer</b>                                     |                                                                                                                                                                                                                                                                        |         |                                                                                           |                                                                                                        |                                  |                                           |                         |
|                                                                 |                                                                                                                                                                                                                                                                        |         |                                                                                           | Undertake all excavation and install new pipes and associated apparatus.                               |                                  |                                           |                         |
|                                                                 |                                                                                                                                                                                                                                                                        |         |                                                                                           | Inspect and supervise.                                                                                 |                                  |                                           |                         |
|                                                                 |                                                                                                                                                                                                                                                                        |         |                                                                                           | Testing and commissioning.                                                                             |                                  |                                           |                         |
|                                                                 |                                                                                                                                                                                                                                                                        |         | Dismantle as required or abandon redundant apparatus<br>Sewers not removed to be grouted. |                                                                                                        |                                  |                                           |                         |
| SWS02<br>(SWW ref SWD02)<br>Drg B1033200/CD/2700/SW/018 and 019 | <b>Milltimber / A93</b><br>Install 300mm UPVC combined sewer and associated equipment including chambers and overflow weirs etc. as required as diversion to existing 225mm VC sewer across A93.<br><br>Main to be laid in carriageway of existing Milltimber Brae and | B       |                                                                                           | Design diversion                                                                                       | 4 Weeks                          | Wayleave 12 weeks<br>ATC 1 week           | 45 weeks                |
|                                                                 |                                                                                                                                                                                                                                                                        |         | Review diversion design.                                                                  | Review diversion design.                                                                               |                                  |                                           |                         |
|                                                                 |                                                                                                                                                                                                                                                                        |         |                                                                                           | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  | Planned shut down of network - 22 working |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                | Group *                                                                                                                                                      | Main Works by Company                                         | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Sewer</b>                                 |                                                                                                                                                         |                                                                                                                                                              |                                                               |                                                                               |                                  |                                    |                         |
|                                                             | proposed Milltimber Retention Pond Access Track.<br><br>Dismantle as required or abandon redundant 225mm VC pipe across A93 and around Milltimber Brae. |                                                                                                                                                              | Consult and comply with SWW regarding diversion requirements. | Procure apparatus for diversion.                                              |                                  | days                               |                         |
|                                                             |                                                                                                                                                         | Agree measures to safeguard existing apparatus with Statutory Undertaker                                                                                     |                                                               |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                         | Undertake any required temporary protection works.                                                                                                           |                                                               |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                         | Provide traffic management.                                                                                                                                  |                                                               | Agree traffic management.                                                     |                                  |                                    |                         |
|                                                             |                                                                                                                                                         | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. |                                                               | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                                                                                                                                                         |                                                                                                                                                              |                                                               | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                            | Group * | Main Works by Company                                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site                                  | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|---------------------------------------------------------------------|-------------------------|
| <b>Scottish Water Sewer</b>                                 |                                                                                                                                                                                                                                                                                                                                                                     |         |                                                                                           |                                                                                                        |                                  |                                                                     |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                     |         |                                                                                           | Inspect and supervise.                                                                                 |                                  |                                                                     |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                     |         |                                                                                           | Testing and commissioning.                                                                             |                                  |                                                                     |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                     |         | Dismantle as required or abandon redundant apparatus<br>Sewers not removed to be grouted. |                                                                                                        |                                  |                                                                     |                         |
| SWS03<br>(SWW ref SWD04)<br>Drg B1033200/CD/2700/SW/026     | <b>South Kingwells Junction</b><br>Install 315mm HPPE rising main and associated equipment including chambers and overflow weirs etc. as required as diversion to existing 315mm HPPE rising main across A944.<br><br>Main to be laid in carriageway of proposed A944 South Kingwells Roundabout.<br><br>Dismantle as required or abandon redundant 315mm HPPE pipe | B       |                                                                                           | Design diversion                                                                                       | 4 Weeks                          | ATC<br>1 week<br><br>Planned shut down of network - 22 working days | 32 Weeks                |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                     |         | Review diversion design.                                                                  | Review diversion design.                                                                               |                                  |                                                                     |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                     |         |                                                                                           | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  |                                                                     |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                     |         | Consult and comply with SWW regarding diversion requirements.                             | Procure apparatus for diversion.                                                                       |                                  |                                                                     |                         |



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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description             | Group * | Main Works by Company                                                                                                                                                                                                                                                                                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                              | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Sewer</b>                                 |                                      |         |                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                            |                                  |                                    |                         |
|                                                             | across A944 and connection to north. |         | Agree measures to safeguard existing apparatus with Statutory Undertaker<br><br>Undertake any required temporary protection works.<br><br>Provide traffic management.<br><br>Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Agree traffic management.<br><br>Install new pipes and associated apparatus.<br><br>Undertake all excavation and install new pipes and associated apparatus.<br><br>Inspect and supervise. |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference    | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Group * | Main Works by Company                                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site                                  | Works Period Estimate** |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|---------------------------------------------------------------------|-------------------------|
| <b>Scottish Water Sewer</b>                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                                                           |                                                                                                        |                                  |                                                                     |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | Dismantle as required or abandon redundant apparatus<br>Sewers not removed to be grouted. | Testing and commissioning.                                                                             |                                  |                                                                     |                         |
| SWS04<br>(SWW ref SWD03)<br>Drg B1033200/CD/2700/SW/026 and 27 | <b>North of South Kingwells Junction</b><br>Install 1x225mm, & 2x280mm HPPE rising main and 1x200mm, 2x250mm & 1x525mm DI gravity main plus associated equipment including chambers and overflow weirs etc. as required as diversion to existing 1x200mm, & 2x250mm HPPE rising main and 525mm gravity main crossing north of A944 at chainage 108680m.<br><br>Mains to be laid north of attenuation ponds and under proposed AWPR mainline at approximate chainage 108750m.<br><br>Dismantle as required or abandon | C       |                                                                                           | Design diversion                                                                                       | 4 Weeks                          | ATC<br>1 week<br><br>Planned shut down of network - 22 working days | 18 weeks                |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | Review diversion design.                                                                  | Review diversion design.                                                                               |                                  |                                                                     |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                                                                                           | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  |                                                                     |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | Consult and comply with SWW regarding diversion requirements.                             | Procure apparatus for diversion.                                                                       |                                  |                                                                     |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | Agree measures to safeguard existing apparatus with Statutory Undertaker                  |                                                                                                        |                                  |                                                                     |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                             | Group *                   | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site            | Works Period Estimate** |                        |  |                            |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------|-------------------------|------------------------|--|----------------------------|
| <b>Scottish Water Sewer</b>                                 |                                                                                                                                                                                      |                           |                                                                                                                                                              |                                                                               |                                  |                                               |                         |                        |  |                            |
|                                                             | redundant 1x200mm, & 2x250mm HPPE rising main and 525mm gravity main crossing north of A944 at chainage 108680m. Additional 3x 200mm DI sleeve to be laid as spare at same location. |                           | Undertake any required temporary protection works.                                                                                                           |                                                                               |                                  |                                               |                         |                        |  |                            |
| Provide traffic management.                                 |                                                                                                                                                                                      | Agree traffic management. | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  | Undertake connection and reinstatement works. |                         | Inspect and supervise. |  | Testing and commissioning. |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                             | Group * | Main Works by Company                                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site                                                                                  | Works Period Estimate**       |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <b>Scottish Water Sewer</b>                                 |                                                                                                                                                      |         |                                                                                           |                                                                               |                                  |                                                                                                                     |                               |
|                                                             |                                                                                                                                                      |         | Dismantle as required or abandon redundant apparatus<br>Sewers not removed to be grouted. |                                                                               |                                  |                                                                                                                     |                               |
| SWS05<br>(SWW ref SWD05)<br>Drg B1033200/CD/2700/SW/27      | <b>West Hatton</b><br>Chainage 109190m<br>CCTV Survey of previously abandoned 450mm concrete gravity sewer to ensure no live connections still exist |         | Consult and comply with SW regarding requirements.                                        |                                                                               | N/A                              | ATC - 1 week pre construct<br><br>ATC - 1 week post construct<br><br>Planned shut down of network - 22 working days | 1 week pre<br><br>1 week post |
|                                                             |                                                                                                                                                      |         | Agree measures to safeguard existing apparatus with Statutory Undertaker                  |                                                                               |                                  |                                                                                                                     |                               |
|                                                             |                                                                                                                                                      |         | Undertake any required temporary protection works.                                        |                                                                               |                                  |                                                                                                                     |                               |
|                                                             |                                                                                                                                                      |         | Undertake CCTV                                                                            |                                                                               |                                  |                                                                                                                     |                               |
|                                                             |                                                                                                                                                      |         | Provide traffic management.                                                               | Agree traffic management                                                      |                                  |                                                                                                                     |                               |
| SWS06<br>(SWW ref SWD06)<br>Drg B1033200/CD/                | <b>B999 (Advocates Row)</b><br>Pre and Post construction CCTV survey                                                                                 |         | Consult and comply with SW regarding requirements.                                        |                                                                               | N/A                              | ATC - 1 week pre construct<br><br>ATC - 1 week post                                                                 | 1 week pre<br><br>1 week post |
|                                                             |                                                                                                                                                      |         | Agree measures to safeguard existing apparatus with                                       |                                                                               |                                  |                                                                                                                     |                               |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference   | Location and Description                                                                                                 | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site                                                                                  | Works Period Estimate**         |
|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------|
| <b>Scottish Water Sewer</b>                                   |                                                                                                                          |         |                                                                          |                                                                               |                                  |                                                                                                                     |                                 |
| 2700/SW/051                                                   |                                                                                                                          |         | Statutory Undertaker                                                     |                                                                               |                                  | construct                                                                                                           |                                 |
|                                                               |                                                                                                                          |         | Undertake any required temporary protection works.                       |                                                                               |                                  |                                                                                                                     |                                 |
|                                                               |                                                                                                                          |         | Undertake CCTV                                                           |                                                                               |                                  |                                                                                                                     |                                 |
|                                                               |                                                                                                                          |         | Provide traffic management.                                              | Agree traffic management.                                                     |                                  |                                                                                                                     |                                 |
| SWS07<br>(SWW ref SWD07)<br>Drg<br>B1033200/CD/<br>2700/SW/71 | <b>A96 / Dyce Drive Roundabout</b><br>No diversion currently anticipated<br>5 no Pre and Post construction CCTV surveys. |         | Consult and comply with SW regarding requirements.                       |                                                                               | N/A                              | ATC - 1 week pre construct<br><br>ATC - 1 week post construct<br><br>Planned shut down of network - 22 working days | 2 weeks pre<br><br>2 weeks post |
|                                                               |                                                                                                                          |         | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               |                                  |                                                                                                                     |                                 |
|                                                               |                                                                                                                          |         | Undertake any required temporary protection works.                       |                                                                               |                                  |                                                                                                                     |                                 |
|                                                               |                                                                                                                          |         | Undertake CCTV                                                           |                                                                               |                                  |                                                                                                                     |                                 |
|                                                               |                                                                                                                          |         | Provide traffic management.                                              | Agree traffic management.                                                     |                                  |                                                                                                                     |                                 |
| SWS08A                                                        | <b>A90 Foul Sewer Diversion</b>                                                                                          | B       | Consult and comply with SW regarding                                     |                                                                               | 3 Months                         | 3 Months                                                                                                            | 5 days                          |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                     | Group * | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Sewer</b>                                 |                                                                                              |         |                                                                          |                                                                               |                                  |                                    |                         |
| (SW Ref. SW-D08)<br>Drg: P246600/2700<br>/SW/003            | Pre-Construction CCTV<br>Existing MH2402 cover level to be reduced to suit new road profile. |         | requirements.                                                            |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                              |         | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                              |         | Undertake any required temporary and permanent protection works.         |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                              |         | Undertake CCTV                                                           |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                              |         | Provide traffic management.                                              | Agree traffic management.                                                     |                                  |                                    |                         |
|                                                             |                                                                                              |         |                                                                          | Test and commissioning.                                                       |                                  |                                    |                         |
| SWS08B<br>(SW Ref. SW-D08)<br>Drg: P246600/2700<br>/SW/003  | <b>A90 Foul Sewer Diversion</b><br>Post-Construction CCTV                                    | B       | Consult and comply with SW regarding requirements.                       |                                                                               | 3 Months                         | 3 Months                           | 5 days                  |
|                                                             |                                                                                              |         | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                              |         | Undertake any                                                            |                                                                               |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                            | Group * | Main Works by Company                                         | Works by Statutory Undertakers', Private Apparatus owners and others affected                   | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Sewer</b>                                 |                                                                                                                                                     |         |                                                               |                                                                                                 |                                  |                                    |                         |
|                                                             |                                                                                                                                                     |         | required temporary protection works.                          |                                                                                                 |                                  |                                    |                         |
|                                                             |                                                                                                                                                     |         | Undertake CCTV                                                |                                                                                                 |                                  |                                    |                         |
|                                                             |                                                                                                                                                     |         | Provide traffic management.                                   | Agree traffic management.                                                                       |                                  |                                    |                         |
|                                                             |                                                                                                                                                     |         |                                                               | Test and commissioning.                                                                         |                                  |                                    |                         |
| SWS09<br>(SW Ref. SW-D09)<br>Drg: P246600/2700<br>/SW/003   | <b>A90 Foul Sewer Diversion</b><br>Diversion of existing sewer MH1 – MH12 including twin 300mm DI sewers auger bored under existing A90 and garden. | C       |                                                               | Design diversion                                                                                | 4 Months                         | 3 Months                           | 32 Weeks                |
|                                                             |                                                                                                                                                     |         | Review diversion design.                                      | Review diversion design.                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                     |         |                                                               | Obtain necessary wayleaves and section 37 consents (where required and not previously complete) |                                  |                                    |                         |
|                                                             |                                                                                                                                                     |         | Consult and comply with SWW regarding diversion requirements. | Procure apparatus for diversion.                                                                |                                  |                                    |                         |
|                                                             |                                                                                                                                                     |         | Agree measures to safeguard existing apparatus with           |                                                                                                 |                                  |                                    |                         |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group * | Main Works by Company                                                                                                                                                                                                                                                                                                                                  | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Sewer</b>                                 |                          |         |                                                                                                                                                                                                                                                                                                                                                        |                                                                               |                                  |                                    |                         |
|                                                             |                          |         | Statutory Undertaker<br>Undertake any required temporary protection works.<br>Provide traffic management.<br>Undertake all excavation and install new pipes and associated apparatus.<br>Undertake connection and reinstatement works.<br>Inspect and supervise.<br>Testing and commissioning.<br>Dismantle as required or abandon redundant apparatus | Agree traffic management.                                                     |                                  |                                    |                         |



## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference    | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                    | Design and Material Order Period | Notification Period to Attend Site                                                            | Works Period Estimate** |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |                                                                          |                                                                                                  |                                  |                                                                                               |                         |
| SWW01<br>(SWW ref SWW01)<br>Drg<br>B1033200/CD/<br>2700/SW/001 | <b>Stonehaven Junction</b><br><br>Install 280mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as diversion to existing 10" PVC main between A90 Stonehaven Southbound Merge Slip Road at approx. chainage 0+460 and Megray Farm Access Road. Main to be laid in carriageway of B979 under A90 underbridge and within 350mm DI sleeve across Stonehaven Northbound Merge and Diverge Slip Roads.<br><br>Dismantle as required or abandon redundant 10" PVC pipe. | B      |                                                                          | Design diversion                                                                                 | 4 Weeks                          | 6 Weeks<br>(Statutory Notice)<br><br>4 Weeks<br>(DOMS)<br><br>2 Weeks<br>(Traffic Management) | 19 Weeks                |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        | Review diversion design.                                                 | Review diversion design.                                                                         |                                  |                                                                                               |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |                                                                          | Obtain necessary wayleaves and section 37 consents (where required and not previously completed) |                                  |                                                                                               |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                 |                                  |                                                                                               |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                  |                                  |                                                                                               |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        | Undertake any required temporary protection works.                       |                                                                                                  |                                  |                                                                                               |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        | Provide traffic management.                                              | Agree traffic management.                                                                        |                                  |                                                                                               |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description   | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                            |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                            |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                            |        |                                                                                                                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                            |        |                                                                                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                            |        |                                                                                                                                                              | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                            |        | Dismantle as required or abandon redundant apparatus                                                                                                         |                                                                               |                                  |                                    |                         |
| SWW02                                                       | <b>Stonehaven Junction</b> | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 6 Weeks (Statutory)                | 21 Weeks                |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                    | Design and Material Order Period | Notification Period to Attend Site                        | Works Period Estimate** |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |                                                                          |                                                                                                  |                                  |                                                           |                         |
| (SWW ref SWW02)<br>Drg B1033200/CD/2700/SW/001 and 056      | Install 225mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as diversion to existing 225mm MDPE main between A90 Stonehaven Southbound Merge Slip Road at approx. chainage 0+060 and Megray Farm Access Road. Main to be laid in carriageway of B979 under A90 underbridge and within 300mm DI sleeve across Stonehaven Northbound Merge and Diverge Slip Roads. Additional 350mm DI sleeve to be laid as spare at same location. New main to be connected to existing 225mm MDPE main in B979 Netherley Road at A90 underbridge.<br><br>Dismantle as required or abandon redundant 225mm MDPE pipe. |        | Review diversion design.                                                 | Review diversion design.                                                                         |                                  | Notice)<br>4 Weeks (DOMS)<br>2 Weeks (Traffic Management) |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |                                                                          | Obtain necessary wayleaves and section 37 consents (where required and not previously completed) |                                  |                                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                 |                                  |                                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                  |                                  |                                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        | Undertake any required temporary protection works.                       |                                                                                                  |                                  |                                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        | Provide traffic management.                                              | Agree traffic management.                                                                        |                                  |                                                           |                         |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                          |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                          |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                          |        | Dismantle as required or abandon redundant apparatus (to be confirmed as Company's obligation)                                                               |                                                                               |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                           | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site                                                   | Works Period Estimate** |
|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |                                                                          |                                                                               |                                  |                                                                                      |                         |
| SWW03 and SWW03a<br><br>(SWW ref SWW03 and SWW48 and 48T)<br><br>Drg B1033200/CD/2700/SW/001 and 057. | <b>Stonehaven Junction</b><br><br>Install 160mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as diversion to existing 6" SI main between New Mains of Ury and Megray Farm Access Road. Main to be laid under B979 Netherley Road at approx. chainage 0+090, in north verge of roundabout and within 200mm DI sleeve across AWPR Fastlink carriageway at approx. chainage 0+060. Additional 300mm DI sleeve to be laid as spare at same location.<br><br>Dismantle as required or abandon redundant 6" SI pipe.<br><br>In advance of main works install 90mm HPPE SDR17 main as temporary diversion to existing 3" PVC main. | B      |                                                                          | Design diversion                                                              | 4 Weeks                          | 6 Weeks (Statutory Notice)<br><br>4 Weeks (DOMS)<br><br>2 Weeks (Traffic Management) | 8 Weeks                 |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        | Review diversion design.                                                 | Review diversion design.                                                      |                                  |                                                                                      |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |                                                                          | Obtain necessary wayleaves and section 37 consents (where required)           |                                  |                                                                                      |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                              |                                  |                                                                                      |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               |                                  |                                                                                      |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        | Undertake any required temporary protection works.                       |                                                                               |                                  |                                                                                      |                         |
|                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        | Provide traffic management.                                              | Agree traffic management.                                                     |                                  |                                                                                      |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                            | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                     |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             | Install 90mm HPPE SDR17 main as diversion to existing 3" PVC main under new stonehaven southbound diverge slip road.<br><br>Dismantle as required or abandon redundant 3" PVC pipe. |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                     |        |                                                                                                                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                     |        |                                                                                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                     |        |                                                                                                                                                              | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                     |        | Dismantle as required or abandon redundant apparatus                                                                                                         |                                                                               |                                  |                                    |                         |
| SWW03B<br><br>(SWW ref SWW47)                               | <b>Stonehaven Junction</b><br><br>Install 250mm HPPE SDR17 main as diversion to existing 10" PVC                                                                                    | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks (DOMS)                     | 4 Weeks                 |
|                                                             |                                                                                                                                                                                     |        | Review diversion design.                                                                                                                                     | Review diversion design.                                                      |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                              | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                   | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                       |        |                                                                          |                                                                                                 |                                  |                                    |                         |
| Drg B1033200/CD/2700/SW/001                                 | scour pipe under Megray Farm Access Road.<br>Dismantle as required or abandon redundant 10" PVC pipe. |        |                                                                          | Obtain necessary wayleaves and section 37 consents (where required and not previously complete) |                                  |                                    |                         |
|                                                             |                                                                                                       |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                |                                  |                                    |                         |
|                                                             |                                                                                                       |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                 |                                  |                                    |                         |
|                                                             |                                                                                                       |        | Undertake any required temporary protection works.                       |                                                                                                 |                                  |                                    |                         |
|                                                             |                                                                                                       |        | Provide traffic management.                                              | Agree traffic management.                                                                       |                                  |                                    |                         |
|                                                             |                                                                                                       |        |                                                                          | Undertake all excavation and install new pipes and associated apparatus.                        |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                           | Group* | Main Works by Company                                | Works by Statutory Undertakers', Private Apparatus owners and others affected                   | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                    |        |                                                      |                                                                                                 |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                    |        |                                                      | Undertake connection and reinstatement works.                                                   |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                    |        |                                                      | Inspect and supervise.                                                                          |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                    |        |                                                      | Testing and commissioning.                                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                    |        | Dismantle as required or abandon redundant apparatus |                                                                                                 |                                  |                                    |                         |
| SWW04<br>(SWW ref SWW04)<br>Drg B1033200/CD/2700/SW/001     | <b>Stonehaven Junction</b><br>Install 250mm HPPE SDR11 main and associated equipment including chambers and valves etc. as required as diversion to existing 200mm DI main between west of AWPR Fastlink carriageway at approx. chainage 0+280 and Megray Farm Access Road. Main to be laid within | B      |                                                      | Design diversion                                                                                | 4 Weeks                          | 4 Weeks (DOMS)                     | 10 Weeks                |
|                                                             |                                                                                                                                                                                                                                                                                                    |        | Review diversion design.                             | Review diversion design.                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                    |        |                                                      | Obtain necessary wayleaves and section 37 consents (where required and not previously complete) |                                  |                                    |                         |



## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                     | Group* | Main Works by Company                                                                                                                                                                                                                                                                                                                                                                                          | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                             | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                              |        |                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                           |                                  |                                    |                         |
|                                                             | 300mm DI sleeve across AWPR Fastlink carriageway at approx. chainage 0+060.<br><br>Dismantle as required or abandon redundant 200mm DI pipe. |        | Consult and comply with SWW regarding diversion requirements.<br><br>Agree measures to safeguard existing apparatus with Statutory Undertaker<br><br>Undertake any required temporary protection works.<br><br>Provide traffic management.<br><br>Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Procure apparatus for diversion.<br><br><br><br>Agree traffic management.<br><br>Undertake all excavation and install new pipes and associated apparatus. |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference     | Location and Description                                                                                                                                                                                                                                                                                             | Group* | Main Works by Company                                | Works by Statutory Undertakers', Private Apparatus owners and others affected                   | Design and Material Order Period | Notification Period to Attend Site             | Works Period Estimate**                    |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------|
| <b>Scottish Water Supply (SWW)</b>                              |                                                                                                                                                                                                                                                                                                                      |        |                                                      |                                                                                                 |                                  |                                                |                                            |
|                                                                 |                                                                                                                                                                                                                                                                                                                      |        |                                                      | Undertake connection and reinstatement works.                                                   |                                  |                                                |                                            |
|                                                                 |                                                                                                                                                                                                                                                                                                                      |        |                                                      | Inspect and supervise.                                                                          |                                  |                                                |                                            |
|                                                                 |                                                                                                                                                                                                                                                                                                                      |        |                                                      | Testing and commissioning.                                                                      |                                  |                                                |                                            |
|                                                                 |                                                                                                                                                                                                                                                                                                                      |        | Dismantle as required or abandon redundant apparatus |                                                                                                 |                                  |                                                |                                            |
| SWW05<br>(SWW ref SWW05 and 05T)<br>Drg B1033200/CD/2700/SW/003 | <b>U89K Auquorthies to Ury Road</b><br><br>In advance of main works install 90mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as temporary diversion to existing 3" PVC main. Main to be laid within 150mm DI sleeve across AWPR Fastlink carriageway at approx. chainage | B      |                                                      | Design diversion                                                                                | 4 Weeks                          | 4 Weeks (DOMS)<br>2 Weeks (Traffic Management) | 6 Weeks (Temporary)<br>6 Weeks (Permanent) |
|                                                                 |                                                                                                                                                                                                                                                                                                                      |        |                                                      | Review diversion design.                                                                        |                                  |                                                |                                            |
|                                                                 |                                                                                                                                                                                                                                                                                                                      |        |                                                      | Obtain necessary wayleaves and section 37 consents (where required and not previously complete) |                                  |                                                |                                            |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                   | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                            |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             | 1+540.<br><br>Install 90mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required with 30mm insulation within 200mm DI sleeve through U89K NMU underpass. Additional 200mm DI sleeve to be laid as spare at same location.<br><br>Dismantle as required or abandon redundant 3" PVC pipe. |        | Consult and comply with SWW regarding diversion requirements.                                                                                                | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                            |        | Agree measures to safeguard existing apparatus with Statutory Undertaker                                                                                     |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                            |        | Undertake any required temporary protection works.                                                                                                           |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                            |        | Provide traffic management.                                                                                                                                  | Agree traffic management.                                                     |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                            |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                    | Group* | Main Works by Company                                | Works by Statutory Undertakers', Private Apparatus owners and others affected                   | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                             |        |                                                      |                                                                                                 |                                  |                                    |                         |
|                                                             |                                                                                                                                                             |        |                                                      | Undertake connection and reinstatement works.                                                   |                                  |                                    |                         |
|                                                             |                                                                                                                                                             |        |                                                      | Inspect and supervise.                                                                          |                                  |                                    |                         |
|                                                             |                                                                                                                                                             |        |                                                      | Testing and commissioning.                                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                             |        | Dismantle as required or abandon redundant apparatus |                                                                                                 |                                  |                                    |                         |
| SWW06<br>(SWW ref SWW06)<br>Drg B1033200/CD/2700/SW/005     | <b>U88K Fishermyre to Clayfolds Road</b><br><br>Relocate washout hydrant on existing 3" PVC main north of junction with U167K Cantlayhills to Wellhead Road | B      |                                                      | Design diversion                                                                                | 4 Weeks                          | 4 Weeks (DOMS)                     | 2 Weeks                 |
|                                                             |                                                                                                                                                             |        | Review diversion design.                             | Review diversion design.                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                             |        |                                                      | Obtain necessary wayleaves and section 37 consents (where required and not previously complete) |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                          |        |                                                                          |                                                                               |                                  |                                    |                         |
|                                                             |                          |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                              |                                  |                                    |                         |
|                                                             |                          |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               |                                  |                                    |                         |
|                                                             |                          |        | Undertake any required temporary protection works.                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |        | Provide traffic management.                                              | Agree traffic management.                                                     |                                  |                                    |                         |
|                                                             |                          |        |                                                                          | Install new pipes and associated apparatus.                                   |                                  |                                    |                         |
|                                                             |                          |        |                                                                          | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                          |        |                                                                          | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                          |        |                                                                          | Testing and commissioning.                                                    |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                   | Design and Material Order Period | Notification Period to Attend Site             | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                         |        |                                                                          |                                                                                                 |                                  |                                                |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                         |        | Dismantle as required or abandon redundant apparatus                     |                                                                                                 |                                  |                                                |                         |
| SWW07<br>(SWW ref SWW07)<br>Drg B1033200/CD/2700/SW/006     | <b>Allochie Access Track</b><br><br>Install 2 x 90mm HPPE SDR17 mains and associated equipment including chambers and valves etc. as required as diversion to existing 3" PVC main across AWPR Fastlink carriageway at approx. chainage 4+320. Mains to be laid within 150mm DI sleeves.<br><br>Dismantle as required or abandon redundant 3" PVC pipe. | B      |                                                                          | Design diversion                                                                                | 4 Weeks                          | 4 Weeks (DOMS)<br>2 Weeks (Traffic Management) | 8 Weeks                 |
|                                                             |                                                                                                                                                                                                                                                                                                                                                         |        | Review diversion design.                                                 | Review diversion design.                                                                        |                                  |                                                |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                         |        |                                                                          | Obtain necessary wayleaves and section 37 consents (where required and not previously complete) |                                  |                                                |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                         |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                |                                  |                                                |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                         |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                 |                                  |                                                |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                          |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                          |        | Undertake any required temporary protection works.                                                                                                           |                                                                               |                                  |                                    |                         |
|                                                             |                          |        | Provide traffic management.                                                                                                                                  | Agree traffic management.                                                     |                                  |                                    |                         |
|                                                             |                          |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Install new pipes and associated apparatus.                                   |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Testing and commissioning.                                                    |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference     | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Group* | Main Works by Company                                | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |                                                                                                 |
|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|-------------------------------------------------------------------------------------------------|
| <b>Scottish Water Supply (SWW)</b>                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |                                                      |                                                                               |                                  |                                    |                         |                                                                                                 |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        | Dismantle as required or abandon redundant apparatus |                                                                               |                                  |                                    |                         |                                                                                                 |
| SWW08<br>(SWW ref SWW08 and 08T)<br>Drg B1033200/CD/2700/SW/007 | <b>C12K Bridge of Muchalls to Netherley Road</b><br><br>In advance of main works install 90mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as temporary diversion to existing 3" PVC main.<br><br>Install 90mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required with 30mm insulation within 200mm DI sleeve through south verge of C12K overbridge. Additional 200mm DI sleeve to be laid as spare at same location.<br><br>Dismantle as required or abandon | B      |                                                      | Design diversion                                                              | 4 Weeks                          | 4 Weeks (DOMS)                     | 10 Weeks                |                                                                                                 |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |                                                      | Review diversion design.                                                      |                                  |                                    |                         | Review diversion design.                                                                        |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |                                                      |                                                                               |                                  |                                    |                         | Obtain necessary wayleaves and section 37 consents (where required and not previously complete) |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |                                                      | Consult and comply with SWW regarding diversion requirements.                 |                                  |                                    |                         | Procure apparatus for diversion.                                                                |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |                                                      | Agree measures to safeguard existing apparatus with Statutory Undertaker      |                                  |                                    |                         |                                                                                                 |



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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company                                                                                                                                                                                                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                                  | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                          |        |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                |                                  |                                    |                         |
|                                                             | redundant 3" PVC pipe.   |        | Undertake any required temporary protection works.<br><br>Provide traffic management.<br><br>Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Agree traffic management.<br><br>Undertake all excavation and install new pipes and associated apparatus.<br><br>Undertake connection and reinstatement works.<br><br>Inspect and supervise.<br><br>Testing and commissioning. |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                   | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |                                                                          |                                                                                                 |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        | Dismantle as required or abandon redundant apparatus                     |                                                                                                 |                                  |                                    |                         |
| SWW09<br>(SWW ref SWW09)<br>Drg B1033200/CD/2700/SW/009     | <b>North Cookney</b><br><br>Install 225mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as diversion to existing 9" PVC main between North Cookney and C24K Skateraw to Cookney Road at approx. chainage 0+000. Main to be laid in new footpath to east of C25K overbridge, and thence in south verge of C24K. Main to be laid as 2 x 225mm HPPE mains with 30mm insulation within 350mm DI sleeves through C25K overbridge. New main to be connected to new 90mm HPPE main (see SWW10) at junction with West Stoneyhill Access Road. | B      |                                                                          | Design diversion                                                                                | 4 Weeks                          | 4 Weeks (DOMS)                     | 16 Weeks                |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        | Review diversion design.                                                 | Review diversion design.                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |                                                                          | Obtain necessary wayleaves and section 37 consents (where required and not previously complete) |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                 |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                | Group*                                                                                                                                                       | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                         |                                                                                                                                                              |                                                                          |                                                                               |                                  |                                    |                         |
|                                                             | Dismantle as required or abandon redundant 9" PVC pipe. |                                                                                                                                                              | Undertake any required temporary protection works.                       |                                                                               |                                  |                                    |                         |
|                                                             |                                                         | Provide traffic management.                                                                                                                                  | Agree traffic management.                                                |                                                                               |                                  |                                    |                         |
|                                                             |                                                         | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus. |                                                                               |                                  |                                    |                         |
|                                                             |                                                         |                                                                                                                                                              | Undertake connection and reinstatement works.                            |                                                                               |                                  |                                    |                         |
|                                                             |                                                         |                                                                                                                                                              | Inspect and supervise.                                                   |                                                                               |                                  |                                    |                         |
|                                                             |                                                         |                                                                                                                                                              | Testing and commissioning.                                               |                                                                               |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference     | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                   | Design and Material Order Period | Notification Period to Attend Site             | Works Period Estimate** |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |                                                                          |                                                                                                 |                                  |                                                |                         |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        | Dismantle as required or abandon redundant apparatus                     |                                                                                                 |                                  |                                                |                         |
| SWW10<br>(SWW ref SWW10 and 10T)<br>Drg B1033200/CD/2700/SW/009 | <b>North Cookney</b><br><br>In advance of main works install temporary 90mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as temporary diversion to existing 3" PVC main across North Cookney Croft Access Road.<br><br>Install 90mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as diversion to existing 3" PVC main between North Cookney and North Cookney Croft. Main to be laid adjacent to the base of West Stoneyhill Access Road embankment from connection with | B      |                                                                          | Design diversion                                                                                | 4 Weeks                          | 4 Weeks (DOMS)<br>2 Weeks (Traffic Management) | 8 Weeks                 |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        | Review diversion design.                                                 | Review diversion design.                                                                        |                                  |                                                |                         |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |                                                                          | Obtain necessary wayleaves and section 37 consents (where required and not previously complete) |                                  |                                                |                         |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                |                                  |                                                |                         |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                 |                                  |                                                |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                | Group* | Main Works by Company                                                                                                                                                                                                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                         | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                         |        |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                       |                                  |                                    |                         |
|                                                             | diversion SWW09 at chainage 0+000 to tie-in with existing main at approx. chainage 0+200 and then east under North Cookney Croft Access Road from West Stoneyhill Access Road at chainage 0+170m to North Cookney Croft.<br><br>Dismantle as required or abandon redundant 3" PVC pipe. |        | Undertake any required temporary protection works.<br><br>Provide traffic management.<br><br>Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.<br><br><br><br>Undertake connection and reinstatement works.<br><br>Inspect and supervise.<br><br>Testing and commissioning. |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                             | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                   | Design and Material Order Period | Notification Period to Attend Site             | Works Period Estimate** |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                                                          |                                                                                                 |                                  |                                                |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        | Dismantle as required or abandon redundant apparatus                     |                                                                                                 |                                  |                                                |                         |
| SWW11<br>(SWW ref SWW11)<br>Drg B1033200/CD/2700/SW/009     | <b>North Cookney</b><br>Install 225mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as diversion to existing 9" PVC main on C25K Muchalls to Burnhead Road. Main to be laid in east verge of new carriageway between approx. chainages 0+000 to 1+070 and thence across carriageway to tie-in with existing main in North Cookney Access Road..<br>Dismantle as required or abandon redundant 9" PVC pipe. | B      |                                                                          | Design diversion                                                                                | 4 Weeks                          | 4 Weeks (DOMS)<br>2 Weeks (Traffic Management) | 8 Weeks                 |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        | Review diversion design.                                                 | Review diversion design.                                                                        |                                  |                                                |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                                                          | Obtain necessary wayleaves and section 37 consents (where required and not previously complete) |                                  |                                                |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                |                                  |                                                |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                 |                                  |                                                |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                          |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                          |        | Undertake any required temporary protection works.                                                                                                           |                                                                               |                                  |                                    |                         |
|                                                             |                          |        | Provide traffic management.                                                                                                                                  | Agree traffic management.                                                     |                                  |                                    |                         |
|                                                             |                          |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Testing and commissioning.                                                    |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference    | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                | Group* | Main Works by Company                                | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site                                           | Works Period Estimate** |                                                                                                 |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------------------|
| <b>Scottish Water Supply (SWW)</b>                             |                                                                                                                                                                                                                                                                                                                                                                                                                         |        |                                                      |                                                                               |                                  |                                                                              |                         |                                                                                                 |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                         |        | Dismantle as required or abandon redundant apparatus |                                                                               |                                  |                                                                              |                         |                                                                                                 |
| SWW12<br>(SWW ref SWW12)<br>Drg<br>B1033200/CD/<br>2700/SW/009 | <b>North Cookney</b><br><br>Install 90mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as diversion to existing 4" PVC main on C25K Muchalls to Burnhead Road. Main to be laid on new alignment to suit crossing under diverted North Cookney Ditch to washout hydrant on C24K Skateraw to Cookney Road at approx. chainage 0+500. Domestic services to be transferred to new | B      |                                                      | Design diversion                                                              | 4 Weeks                          | 6 Weeks (Statutory Notice)<br>4 Weeks (DOMS)<br>2 Weeks (Traffic Management) | 8 Weeks                 |                                                                                                 |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                         |        |                                                      | Review diversion design.                                                      |                                  |                                                                              |                         | Review diversion design.                                                                        |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                         |        |                                                      |                                                                               |                                  |                                                                              |                         | Obtain necessary wayleaves and section 37 consents (where required and not previously complete) |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                         |        |                                                      | Consult and comply with SWW regarding diversion requirements.                 |                                  |                                                                              |                         | Procure apparatus for diversion.                                                                |



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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                             | Group* | Main Works by Company                                                                                                                                                                                                                                                                                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                      |        |                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                              |                                  |                                    |                         |
|                                                             | main.<br><br>Dismantle as required or abandon redundant 4" PVC pipe. |        | Agree measures to safeguard existing apparatus with Statutory Undertaker<br><br>Undertake any required temporary protection works.<br><br>Provide traffic management.<br><br>Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Agree traffic management.<br><br>Undertake all excavation and install new pipes and associated apparatus.<br><br>Undertake connection and reinstatement works.<br><br>Inspect and supervise. |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference    | Location and Description                                                                                                                                                                                                                                                                                                                                                     | Group* | Main Works by Company                                | Works by Statutory Undertakers', Private Apparatus owners and others affected       | Design and Material Order Period | Notification Period to Attend Site                 | Works Period Estimate** |
|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                             |                                                                                                                                                                                                                                                                                                                                                                              |        |                                                      |                                                                                     |                                  |                                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                              |        |                                                      | Testing and commissioning.                                                          |                                  |                                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                              |        | Dismantle as required or abandon redundant apparatus |                                                                                     |                                  |                                                    |                         |
| SWW13<br>(SWW ref SWW13)<br>Drg<br>B1033200/CD/<br>2700/SW/010 | <b>Meadowbank</b><br><br>Install 90mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as diversion to existing 3" PVC main. Diversion to be laid as 2 x 90mm HPPE SDR17 mains each within 150mm DI sleeve across AWPR Fastlink carriageway at approx. chainage 6+980.<br><br>Dismantle as required or abandon redundant 3" PVC pipe. | B      |                                                      | Design diversion                                                                    | 4 Weeks                          | 4 Weeks (DOMS)<br><br>2 Weeks (Traffic Management) | 9 Weeks                 |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                              |        |                                                      | Review diversion design.                                                            |                                  |                                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                              |        |                                                      | Obtain necessary wayleaves and section 37 consents (where not previously complete)) |                                  |                                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                              |        |                                                      | Consult and comply with SWW regarding diversion requirements.                       |                                  |                                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                          |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                          |        | Agree measures to safeguard existing apparatus with Statutory Undertaker                                                                                     |                                                                               |                                  |                                    |                         |
|                                                             |                          |        | Undertake any required temporary protection works.                                                                                                           |                                                                               |                                  |                                    |                         |
|                                                             |                          |        | Provide traffic management.                                                                                                                                  | Agree traffic management.                                                     |                                  |                                    |                         |
|                                                             |                          |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference     | Location and Description                                                                                                                                                                                                                                                                                                                                                                                               | Group* | Main Works by Company                                         | Works by Statutory Undertakers', Private Apparatus owners and others affected                   | Design and Material Order Period | Notification Period to Attend Site                                           | Works Period Estimate** |
|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                              |                                                                                                                                                                                                                                                                                                                                                                                                                        |        |                                                               |                                                                                                 |                                  |                                                                              |                         |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                        |        |                                                               | Testing and commissioning.                                                                      |                                  |                                                                              |                         |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                        |        | Dismantle as required or abandon redundant apparatus          |                                                                                                 |                                  |                                                                              |                         |
| SWW14<br>(SWW ref SWW14 and 14T)<br>Drg B1033200/CD/2700/SW/012 | <b>C13K Lairhillock to Portlethen Road</b><br><br>In advance of main works install temporary 90mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as temporary diversion to existing 3" PVC main in C13K. Provisional alignment of temporary main is along existing access to North Rothnick and east verge of new North Rothnick Access Road.<br>Install 90mm HPPE SDR17 main | B      |                                                               | Design diversion                                                                                | 4 Weeks                          | 6 Weeks (Statutory Notice)<br>4 Weeks (DOMS)<br>2 Weeks (Traffic Management) | 20 Weeks                |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                        |        | Review diversion design.                                      | Review diversion design.                                                                        |                                  |                                                                              |                         |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                        |        |                                                               | Obtain necessary wayleaves and section 37 consents (where required and not previously complete) |                                  |                                                                              |                         |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                        |        | Consult and comply with SWW regarding diversion requirements. | Procure apparatus for diversion.                                                                |                                  |                                                                              |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Group* | Main Works by Company                                                                                                                                                                                                                                                                                                                         | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                     |                                  |                                    |                         |
|                                                             | <p>and associated equipment including chambers and valves etc. as required as diversion to existing 3" PVC main. Main to be laid in north verge of C13K and as 2 x 90mm HPPE mains with 30mm insulation within 200mm (confirm diameter as SW drawing shows both 150 and 200) DI sleeves through C13K overbridge.</p> <p>Install 32mm MDPE service connection from C13K at approx. chainage 0+190 along east verge of new North Rothnick Access Road.</p> <p>Dismantle as required or abandon redundant 3" PVC pipe.</p> |        | <p>Agree measures to safeguard existing apparatus with Statutory Undertaker</p> <p>Undertake any required temporary protection works.</p> <p>Provide traffic management.</p> <p>Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br/>Duct sizes and type to be to requirements of Scottish Water.</p> | <p>Agree traffic management.</p> <p>Undertake all excavation and install new pipes and associated apparatus.</p> <p>Undertake connection and reinstatement works.</p> <p>Inspect and supervise.</p> |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference    | Location and Description                                                                                                                                                                                                                                                                                                          | Group* | Main Works by Company                                | Works by Statutory Undertakers', Private Apparatus owners and others affected                   | Design and Material Order Period | Notification Period to Attend Site                                                   | Works Period Estimate** |                                  |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------------------------------------------|-------------------------|----------------------------------|
| <b>Scottish Water Supply (SWW)</b>                             |                                                                                                                                                                                                                                                                                                                                   |        |                                                      |                                                                                                 |                                  |                                                                                      |                         |                                  |
|                                                                |                                                                                                                                                                                                                                                                                                                                   |        |                                                      | Testing and commissioning.                                                                      |                                  |                                                                                      |                         |                                  |
|                                                                |                                                                                                                                                                                                                                                                                                                                   |        | Dismantle as required or abandon redundant apparatus |                                                                                                 |                                  |                                                                                      |                         |                                  |
| SWW15<br>(SWW ref SWW15)<br>Drg<br>B1033200/CD/<br>2700/SW/014 | <b>C5K Greens of Crynoch</b><br><br>Install 160mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as diversion to existing 125mm HPPE main within 12" SI pipe. Main to be laid in north verge of existing C5K carriageway.<br><br>Dismantle as required or abandon redundant 12" SI pipe. | B      |                                                      | Design diversion                                                                                | 4 Weeks                          | 6 Weeks (Statutory Notice)<br><br>4 Weeks (DOMS)<br><br>2 Weeks (Traffic Management) | 8 Weeks                 |                                  |
|                                                                |                                                                                                                                                                                                                                                                                                                                   |        |                                                      | Review diversion design.                                                                        |                                  |                                                                                      |                         | Review diversion design.         |
|                                                                |                                                                                                                                                                                                                                                                                                                                   |        |                                                      | Obtain necessary wayleaves and section 37 consents (where required and not previously complete) |                                  |                                                                                      |                         |                                  |
|                                                                |                                                                                                                                                                                                                                                                                                                                   |        |                                                      | Consult and comply with SWW regarding diversion requirements.                                   |                                  |                                                                                      |                         | Procure apparatus for diversion. |
|                                                                |                                                                                                                                                                                                                                                                                                                                   |        |                                                      | Agree measures to safeguard existing apparatus with Statutory Undertaker                        |                                  |                                                                                      |                         |                                  |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company                                                                                                                                                                                                                                                                                         | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                                          | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                          |        |                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                        |                                  |                                    |                         |
|                                                             |                          |        | Undertake any required temporary protection works.<br>Provide traffic management.<br>Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br>Duct sizes and type to be to requirements of Scottish Water.<br><br><br>Dismantle as required or abandon redundant apparatus | <br>Agree traffic management.<br>Undertake all excavation and install new pipes and associated apparatus.<br><br>Undertake connection and reinstatement works.<br>Inspect and supervise.<br>Testing and commissioning. |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference    | Location and Description                                                                                                                                                                                                                                                                                   | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                   | Design and Material Order Period | Notification Period to Attend Site             | Works Period Estimate** |
|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                             |                                                                                                                                                                                                                                                                                                            |        |                                                                          |                                                                                                 |                                  |                                                |                         |
| SWW16<br>(SWW ref SWW16)<br>Drg<br>B1033200/CD/<br>2700/SW/016 | <b>U63K Maryculter Road</b><br><br>Install 110mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as diversion to existing 4" PVC main. Main to be laid in south verge of existing U63K carriageway.<br><br>Dismantle as required or abandon redundant 4" PVC pipe. | B      |                                                                          | Design diversion                                                                                | 4 Weeks                          | 4 Weeks (DOMS)<br>2 Weeks (Traffic Management) | 8 Weeks                 |
|                                                                |                                                                                                                                                                                                                                                                                                            |        | Review diversion design.                                                 | Review diversion design.                                                                        |                                  |                                                |                         |
|                                                                |                                                                                                                                                                                                                                                                                                            |        |                                                                          | Obtain necessary wayleaves and section 37 consents (where required and not previously complete) |                                  |                                                |                         |
|                                                                |                                                                                                                                                                                                                                                                                                            |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                |                                  |                                                |                         |
|                                                                |                                                                                                                                                                                                                                                                                                            |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                 |                                  |                                                |                         |
|                                                                |                                                                                                                                                                                                                                                                                                            |        | Undertake any required temporary protection works.                       |                                                                                                 |                                  |                                                |                         |
|                                                                |                                                                                                                                                                                                                                                                                                            |        | Provide traffic management.                                              | Agree traffic management.                                                                       |                                  |                                                |                         |



## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                          |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                          |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                          |        | Dismantle as required or abandon redundant apparatus                                                                                                         |                                                                               |                                  |                                    |                         |
| SWW17                                                       | <b>Milltimber Brae</b>   | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks                            | 8 Weeks                 |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                               | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                   | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                        |        |                                                                          |                                                                                                 |                                  |                                    |                         |
| (SWW ref SWW23)<br>Drg B1033200/CD/2700/SW/019              | Install 225mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as diversion to existing 8" PVC main. Main to be laid as 2 x 225mm HPPE SDR17 pipes each within 300mm DI sleeve across AWPR Southern Leg carriageway at approx. chainage 102+840.<br><br>Dismantle as required or abandon redundant 8" PVC pipe. |        | Review diversion design.                                                 | Review diversion design.                                                                        |                                  | (DOMS)                             |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                        |        |                                                                          | Obtain necessary wayleaves and section 37 consents (where required and not previously complete) |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                        |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                        |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                 |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                        |        | Undertake any required temporary protection works.                       |                                                                                                 |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                        |        | Provide traffic management.                                              | Agree traffic management.                                                                       |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                            | Group* | Main Works by Company                                                                                                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                     |        |                                                                                                                                                          |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                     |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                                                                                                                     |        |                                                                                                                                                          | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                                                                                                                     |        |                                                                                                                                                          | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                     |        |                                                                                                                                                          | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                     |        | Dismantle as required or abandon redundant apparatus                                                                                                     |                                                                               |                                  |                                    |                         |
| SWW18<br>(SWW ref 1924 Aqueduct)<br>Drg                     | <b>A93 North Deeside Road – 1924 Aqueduct</b><br><br>In advance of main works install 1000mm DI main and associated | C      |                                                                                                                                                          | Design diversion                                                              | 4 Weeks                          | 4 Weeks (DOMS)                     | 45 Weeks                |
|                                                             |                                                                                                                     |        | Review diversion design.                                                                                                                                 | Review diversion design.                                                      |                                  | 2 Weeks (Traffic)                  |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                   | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                                                                          |                                                                                                 |                                  |                                    |                         |
| B1033200/CD/<br>2700/SW/019                                 | equipment including chambers and valves etc. as required as temporary diversion to existing aqueduct.<br>Main to be laid in north verge of proposed temporary carriageway diversion.<br><br>Install 1000mm DI main and associated equipment including chambers and valves etc. as required as permanent diversion to existing aqueduct. Main to be laid across existing carriageway at either end of A93 overbridge and thence as 2 x 800mm DI mains within service trench in overbridge.<br><br>At west end of overbridge install |        |                                                                          | Obtain necessary wayleaves and section 37 consents (where required and not previously complete) |                                  | Management)                        |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                 |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        | Undertake any required temporary protection works.                       |                                                                                                 |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        | Provide traffic management.                                              | Agree traffic management.                                                                       |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                | Group* | Main Works by Company                                                                                                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                         |        |                                                                                                                                                          |                                                                               |                                  |                                    |                         |
|                                                             | connection to existing 15" scour pipe in B979 Milltimber Brae Road.<br><br>Dismantle as required or abandon redundant former aqueduct and temporary diversion pipework. |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                         |        |                                                                                                                                                          | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                                                                                                                                                                         |        |                                                                                                                                                          | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                         |        |                                                                                                                                                          | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                         |        | Dismantle as required or abandon redundant apparatus                                                                                                     |                                                                               |                                  |                                    |                         |
| SWW18A<br><br>(SWW ref SWW24 and 24T)                       | <b>A93 North Deeside Road</b><br><br>In advance of main works install 160mm HPPE SDR17main and associated equipment including                                           | B      |                                                                                                                                                          | Design diversion                                                              | 4 Weeks                          | 4 Weeks (DOMS)                     | 16 Weeks                |
|                                                             |                                                                                                                                                                         |        | Review diversion design.                                                                                                                                 | Review diversion design.                                                      |                                  | 2 Weeks (Traffic)                  |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                   | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |                                                                          |                                                                                                 |                                  |                                    |                         |
| Drg<br>B1033200/CD/<br>2700/SW/019                          | chambers and valves etc. as required as temporary diversion to existing 5" CI Distribution Pipe. Main to be laid in north verge of proposed temporary carriageway diversion.<br><br>Install 2x110mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 5" CI pipe as 2x110mm HPPE SDR17 each within 200mm DI sleeve. Main to be laid across existing carriageway at either end of A93 overbridge and then within service trench in overbridge adjacent to 2 x 800mm DI mains (1924 Aqueduct Diversion)<br><br>Dismantle as required or abandon |        |                                                                          | Obtain necessary wayleaves and section 37 consents (where required and not previously complete) |                                  | Management)                        |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                 |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        | Undertake any required temporary protection works.                       |                                                                                                 |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        | Provide traffic management.                                              | Agree traffic management.                                                                       |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                    | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                             |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             | redundant former pipework and temporary diversion pipework. |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                                                             |        |                                                                                                                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                                                             |        |                                                                                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                                                             |        |                                                                                                                                                              | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                             |        | Dismantle as required or abandon redundant apparatus                                                                                                         |                                                                               |                                  |                                    |                         |
| SWW19                                                       | <b>North of A93 – 1866 Aqueduct</b>                         | C      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks (Statutory)                | 40 Weeks                |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference              | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                     | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |                                                                          |                                                                                                   |                                  |                                    |                         |
| (SWW ref 1866 Aqueduct)<br>Drg<br>B1033200/CD/<br>2700/SW/019<br>and 020 | Install 1000mm DI main and associated equipment including chambers and valves etc. as required as permanent diversion to existing brick aqueduct. Main to be laid across AWPR Southern Leg carriageway at approx. chainage 103+240.<br><br>Install 300mm D.I. scour pipe and associated equipment including chambers and valves etc. as required in west verge of AWPR to watercourse outfall at AWPR Southern Leg approx. chainage 102+670<br><br>Dismantle as required or abandon redundant former aqueduct. |        | Review diversion design.                                                 | Review diversion design.                                                                          |                                  | Notice)<br>6 Weeks<br>(DOMS)       |                         |
|                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |                                                                          | Obtain necessary wayleaves and section 37 consents (where required and not previously complete)   |                                  |                                    |                         |
|                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                  |                                  |                                    |                         |
|                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                   |                                  |                                    |                         |
|                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        | Undertake any required temporary protection works.                       |                                                                                                   |                                  |                                    |                         |
|                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        | Provide traffic management.                                              | Agree traffic management.                                                                         |                                  |                                    |                         |
|                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |                                                                          | Undertake all excavation under earthworks outline and install new pipes and associated apparatus. |                                  |                                    |                         |



## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                 | Group* | Main Works by Company                                         | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                          |        |                                                               |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                          |        |                                                               | Undertake connection and reinstatement works.                                                          |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                          |        |                                                               | Inspect and supervise.                                                                                 |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                          |        |                                                               | Testing and commissioning.                                                                             |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                          |        | Dismantle as required or abandon redundant apparatus          |                                                                                                        |                                  |                                    |                         |
| SWW20<br>(SWW ref SWW25)<br>Drg B1033200/CD/2700/SW/020     | <b>Milltimber Junction</b><br>Install 2 x 180mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 6" PVC main in Culter House Road. Main to be laid as 2 x 180mm HPPE SDR17 pipes each within 250mm DI sleeve across AWPR Southern Leg carriageway at approx. chainage 103+720. | B      |                                                               | Design diversion                                                                                       | 4 Weeks                          | 4 Weeks (DOMS)                     | 8 Weeks                 |
|                                                             |                                                                                                                                                                                                                                                                                                                                                          |        | Review diversion design.                                      | Review diversion design.                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                          |        |                                                               | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                          |        | Consult and comply with SWW regarding diversion requirements. | Procure apparatus for diversion.                                                                       |                                  |                                    |                         |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                | Group*                                                                                                                                                       | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                         |                                                                                                                                                              |                                                                          |                                                                               |                                  |                                    |                         |
|                                                             | Dismantle as required or abandon redundant 6" PVC pipe. |                                                                                                                                                              | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               |                                  |                                    |                         |
|                                                             |                                                         | Undertake any required temporary protection works.                                                                                                           |                                                                          |                                                                               |                                  |                                    |                         |
|                                                             |                                                         | Provide traffic management.                                                                                                                                  | Agree traffic management.                                                |                                                                               |                                  |                                    |                         |
|                                                             |                                                         | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus. |                                                                               |                                  |                                    |                         |
|                                                             |                                                         |                                                                                                                                                              | Undertake connection and reinstatement works.                            |                                                                               |                                  |                                    |                         |
|                                                             |                                                         |                                                                                                                                                              | Inspect and supervise.                                                   |                                                                               |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                    | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                  | Group* | Main Works by Company                                | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site             | Works Period Estimate** |
|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                                             |                                                                                                                                                                                                                                                                                                                                                                                                                           |        |                                                      |                                                                                                        |                                  |                                                |                         |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                           |        |                                                      | Testing and commissioning.                                                                             |                                  |                                                |                         |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                           |        | Dismantle as required or abandon redundant apparatus |                                                                                                        |                                  |                                                |                         |
| SWW21<br>(SWW ref SWW26 and 26T, SWW27 and 27T)<br>Drg B1033200/CD/2700/SW/022 | <b>Contlaw Road</b><br>In advance of main works install 110mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as temporary diversion to existing 4" PVC main in Contlaw Road. Also install 250mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as temporary diversion to existing 225mm PVC main between Laggan Cottage Access Road and | B      |                                                      | Design diversion                                                                                       | 4 Weeks                          | 4 Weeks (DOMS)<br>4 Weeks (Traffic Management) | 20 Weeks                |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                           |        |                                                      | Review diversion design.                                                                               |                                  |                                                |                         |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                           |        |                                                      | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  |                                                |                         |
|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                           |        |                                                      | Consult and comply with SWW regarding diversion requirements.                                          |                                  |                                                |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Group* | Main Works by Company                                                                                                                                                                                                                                                                                                                            | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                         | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        |                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                       |                                  |                                    |                         |
|                                                             | <p>Hill of Milltimber Access Road. (97m section in east verge of proposed Hill of Milltimber Access Road will form part of permanent works - see below).</p> <p>Temporary diversions to be laid in common trench across AWPR Southern Leg carriageway at approx. chainage 104+720.</p> <p>Install 110mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required in east verge of Laggan Cottage Access Road and south verge of Contlaw Road as permanent diversion of 4" PVC main.</p> <p>Main to be laid with 30mm insulation within 250mm DI sleeve through Contlaw Road overbridge along with additional 250mm DI duct as spare sleeve.</p> <p>Install 250mm HPPE SDR17 main</p> |        | <p>Agree measures to safeguard existing apparatus with Statutory Undertaker</p> <p>Undertake any required temporary protection works.</p> <p>Provide traffic management.</p> <p>Lay ducts within structures as required to facilitate laying of Scottish Water apparatus</p> <p>Duct sizes and type to be to requirements of Scottish Water.</p> | <p>Agree traffic management.</p> <p>Undertake all excavation and install new pipes and associated apparatus.</p> <p>Undertake connection and reinstatement works.</p> |                                  |                                    |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Group* | Main Works by Company                                | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |                                                      |                                                                               |                                  |                                    |                         |
|                                                             | and associated equipment including chambers and valves etc. as required in east verge of Laggan Cottage Access Road, south verge of Contlaw Road and east verge of Hill of Milltimber Access Road as permanent diversion of 225mm PVC main (97m section in east verge of Hill of Milltimber Access Road comprises temporary main laid as advance works).<br><br>Main to be laid with 30mm insulation within 400mm DI sleeve through Contlaw Road overbridge along with additional 400mm DI duct as spare sleeve.<br><br>Dismantle as required or abandon redundant former 4" and 225mm PVC and temporary diversion pipework. |        |                                                      | Inspect and supervise.<br><br>Testing and commissioning.                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        | Dismantle as required or abandon redundant apparatus |                                                                               |                                  |                                    |                         |
| SWW22                                                       | <b>Beanshill to Gairn</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | B      |                                                      | Design diversion                                                              | 4 Weeks                          | 6 Weeks (Statutory)                | 20 Weeks                |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site                        | Works Period Estimate** |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |                                                                          |                                                                                                        |                                  |                                                           |                         |
| (SWW ref SWW28)<br>Drg B1033200/CD/2700/SW/023 and 024      | Install 250mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 225mm PVC main between Beanshill Access Track and Broomhill Access Road. Main to be laid within LMA alongside east fenceline between AWPR Southern Leg carriageway approx. chainages 106+000 to 106+840.<br><br>At tie-in to existing main at Broomhill Access Track install 32mm MDPE main and associated equipment including chambers and valves etc. as required as service pipe to Gairn. Pipe to be laid within 100mm DI sleeve across AWPR Southern Leg carriageway at approx. chainage 106+840.<br><br>Dismantle as required or abandon |        | Review diversion design.                                                 | Review diversion design.                                                                               |                                  | Notice)<br>4 Weeks (DOMS)<br>2 Weeks (Traffic Management) |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |                                                                          | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  |                                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                       |                                  |                                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                        |                                  |                                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        | Undertake any required temporary protection works.                       |                                                                                                        |                                  |                                                           |                         |
| Provide traffic management.                                 | Agree traffic management.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |        |                                                                          |                                                                                                        |                                  |                                                           |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                 | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                          |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             | redundant 225mm PVC pipe.                |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                                          |        |                                                                                                                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                                          |        |                                                                                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                                          |        |                                                                                                                                                              | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                          |        | Dismantle as required or abandon redundant apparatus                                                                                                         |                                                                               |                                  |                                    |                         |
| SWW23                                                       | <b>C127C Wester Ord to Blacktop Road</b> | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks                            | 8 Weeks                 |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                      | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site        | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                               |        |                                                                          |                                                                                                        |                                  |                                           |                         |
| (SWW ref<br>SWW29)<br>Drg<br>B1033200/CD/<br>2700/SW/024    | Install 110mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 4" PVC main. Main to be laid in south verge of C127C.<br><br>Dismantle as required or abandon redundant 4" PVC pipe. |        | Review diversion design.                                                 | Review diversion design.                                                                               |                                  | (DOMS)<br>4 Weeks<br>(Traffic Management) |                         |
|                                                             |                                                                                                                                                                                                                                                               |        |                                                                          | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                               |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                       |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                               |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                        |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                               |        | Undertake any required temporary protection works.                       |                                                                                                        |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                               |        | Provide traffic management.                                              | Agree traffic management.                                                                              |                                  |                                           |                         |



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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description         | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                  |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                                  |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                                  |        |                                                                                                                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                                  |        |                                                                                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                                  |        |                                                                                                                                                              | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                  |        | Dismantle as required or abandon redundant apparatus                                                                                                         |                                                                               |                                  |                                    |                         |
| SWW24                                                       | <b>South Kingswells Junction</b> | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks                            | 14 Weeks                |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                    | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site        | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                             |        |                                                                          |                                                                                                        |                                  |                                           |                         |
| (SWW ref SWW30)<br>Drg B1033200/CD/2700/SW/026              | Install 355mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 300mm DI main in A944 Aberdeen to Strathdon Road. Main to be laid in outer verge of South Kingswells Roundabout (south side).<br><br>Dismantle as required or abandon redundant 300mm DI pipework. |        | Review diversion design.                                                 | Review diversion design.                                                                               |                                  | (DOMS)<br>4 Weeks<br>(Traffic Management) |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                             |        |                                                                          | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                             |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                       |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                             |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                        |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                             |        | Undertake any required temporary protection works.                       |                                                                                                        |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                             |        | Provide traffic management.                                              | Agree traffic management.                                                                              |                                  |                                           |                         |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description         | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                  |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                                  |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                                  |        |                                                                                                                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                                  |        |                                                                                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                                  |        |                                                                                                                                                              | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                  |        | Dismantle as required or abandon redundant apparatus                                                                                                         |                                                                               |                                  |                                    |                         |
| SWW25                                                       | <b>South Kingswells Junction</b> | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks                            | 16 Weeks                |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site        | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |                                                                          |                                                                                                        |                                  |                                           |                         |
| (SWW ref SWW31)<br>Drg B1033200/CD/2700/SW/026 and 027      | Install 250mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 9" PVC main between A944 Aberdeen to Strathdon Road and C93C Clintery to Kingsford Road. Main to be laid in inner verge of South Kingswells Roundabout (north side) and west verge of C93C. Main to be laid across new roundabout carriageway (east and west sides) within 300mm DI sleeves with additional 300mm DI sleeve at each crossing as spare duct.<br><br>Dismantle as required or abandon redundant 9" PVC pipework. |        | Review diversion design.                                                 | Review diversion design.                                                                               |                                  | (DOMS)<br>4 Weeks<br>(Traffic Management) |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |                                                                          | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                       |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                        |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        | Undertake any required temporary protection works.                       |                                                                                                        |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        | Provide traffic management.                                              | Agree traffic management.                                                                              |                                  |                                           |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description         | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                  |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                                  |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                                  |        |                                                                                                                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                                  |        |                                                                                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                                  |        |                                                                                                                                                              | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                  |        | Dismantle as required or abandon redundant apparatus                                                                                                         |                                                                               |                                  |                                    |                         |
| SWW26                                                       | <b>South Kingswells Junction</b> | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks                            | 20 Weeks                |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site        | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        |                                                                          |                                                                                                        |                                  |                                           |                         |
| (SWW ref SWW32)<br>Drg B1033200/CD/2700/SW/026 and 027      | Install 600mm DI main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 600mm DI main across AWPR Southern Leg carriageway at approx. chainage 108+690. Main to be laid in west verge of South Kingswells Southbound Diverge Slip Road, outer verge of South Kingswells Roundabout (north side) and east verge of C93C Clintery to Kingsford Road.<br><br>Dismantle as required or abandon redundant 600mm DI pipework. |        | Review diversion design.                                                 | Review diversion design.                                                                               |                                  | (DOMS)<br>4 Weeks<br>(Traffic Management) |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        |                                                                          | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                       |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                        |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        | Undertake any required temporary protection works.                       |                                                                                                        |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        | Provide traffic management.                                              | Agree traffic management.                                                                              |                                  |                                           |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                          |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                          |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                          |        | Dismantle as required or abandon redundant apparatus                                                                                                         |                                                                               |                                  |                                    |                         |
| SWW27                                                       | <b>Denburn</b>           | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks                            | 7 Weeks                 |

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## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                     | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |                                                                          |                                                                                                        |                                  |                                    |                         |
| (SWW ref SWW33)<br>Drg B1033200/CD/2700/SW/027              | Install 180mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 6" PVC main across AWPR Southern Leg carriageway at approx. chainage 109+290.<br><br>Main to be laid as 2 x 180mm HPPE SDR17 pipes each within 250mm DI sleeve across AWPR Southern Leg carriageway at approx. chainage 109+310.<br><br>Dismantle as required or abandon redundant 6" PVC pipework. |        | Review diversion design.                                                 | Review diversion design.                                                                               |                                  | (DOMS)                             |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |                                                                          | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                              |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                       |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                              |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                              |        | Undertake any required temporary protection works.                       |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                              |        | Provide traffic management.                                              | Agree traffic management.                                                                              |                                  |                                    |                         |



## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description         | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                  |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                                  |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                                  |        |                                                                                                                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                                  |        |                                                                                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                                  |        |                                                                                                                                                              | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                  |        | Dismantle as required or abandon redundant apparatus                                                                                                         |                                                                               |                                  |                                    |                         |
| SWW28                                                       | <b>North Kingswells Junction</b> | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks                            | 6 Weeks                 |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                        | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site     | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |                                                                          |                                                                                                        |                                  |                                        |                         |
| (SWW ref SWW34 )<br>Drg B1033200/CD/2700/SW/029 and 030     | Install 90mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 4" PVC main across AWPR Southern Leg carriageway at approx. chainage 111+150. Main to be laid as 2x90mm HPPE SDR17 pipes each within 150mm DI sleeves under AWPR southern let carriageway at approx chainage 111125m<br><br>Dismantle as required or abandon redundant 4" PVC pipework. |        | Review diversion design.                                                 | Review diversion design.                                                                               |                                  | (DOMS)<br>4 Weeks (Traffic Management) |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |                                                                          | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  |                                        |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                 |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                       |                                  |                                        |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                 |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                        |                                  |                                        |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                 |        | Undertake any required temporary protection works.                       |                                                                                                        |                                  |                                        |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                 |        | Provide traffic management.                                              | Agree traffic management.                                                                              |                                  |                                        |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description   | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                            |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                            |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                            |        |                                                                                                                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                            |        |                                                                                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                            |        |                                                                                                                                                              | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                            |        | Dismantle as required or abandon redundant apparatus                                                                                                         |                                                                               |                                  |                                    |                         |
| SWW29                                                       | <b>Dykeside Roundabout</b> | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks                            | 8 Weeks                 |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site        | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        |                                                                          |                                                                                                        |                                  |                                           |                         |
| (SWW ref SWW35 and 35T)<br>Drg B1033200/CD/2700/SW/030      | In advance of main works, if required install 90mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as temporary diversion to existing 3" PVC main on C89C Chapel of Stoneywood to Fairley Road.<br><br>Install 90mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 3" PVC main on C89C Chapel of Stoneywood to Fairley Road.<br><br>Dismantle as required or abandon redundant 3" PVC pipework. |        | Review diversion design.                                                 | Review diversion design.                                                                               |                                  | (DOMS)<br>4 Weeks<br>(Traffic Management) |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        |                                                                          | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                       |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                        |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        | Undertake any required temporary protection works.                       |                                                                                                        |                                  |                                           |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        | Provide traffic management.                                              | Agree traffic management.                                                                              |                                  |                                           |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                          |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                          |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                          |        |                                                                                                                                                              | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                          |        | Dismantle as required or abandon redundant apparatus                                                                                                         |                                                                               |                                  |                                    |                         |
| SWW30                                                       | <b>Kepplestone</b>       | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks                            | 7 Weeks                 |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        |                                                                          |                                                                                                        |                                  |                                    |                         |
| (SWW ref SWW36)<br>Drg B1033200/CD/2700/SW/030 and 031      | Install 90mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 4" PVC main across AWPR Southern Leg carriageway at approx. chainage 315+220.<br><br>Main to be laid as 2 x 90mm HPPE SDR17 pipes each within 150mm DI sleeve across AWPR Southern Leg carriageway at approx. chainage 315+280.<br><br>Dismantle as required or abandon redundant 4" PVC pipework across AWPR Northern Leg carriageway at approx. chainage 315+220 |        | Review diversion design.                                                 | Review diversion design.                                                                               |                                  | (DOMS)                             |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        |                                                                          | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                       |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        | Undertake any required temporary protection works.                       |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        | Provide traffic management.                                              | Agree traffic management.                                                                              |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description            | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                     |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                                     |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
|                                                             |                                     |        |                                                                                                                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                                     |        |                                                                                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                                     |        |                                                                                                                                                              | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                     |        | Dismantle as required or abandon redundant apparatus                                                                                                         |                                                                               |                                  |                                    |                         |
| SWW31 and                                                   | <b>U90C Tulloch Road Overbridge</b> | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks                            | 8 Weeks                 |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                        | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site        | Works Period Estimate** |
|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |                                                                          |                                                                                                        |                                  |                                           |                         |
| SWW31A<br>(SWW ref SWW46 and 46T and SWW49)<br>Drg B1033200/CD/2700/SW/031 and 032 | In advance of main works install temporary 90mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as temporary diversion to existing 90mm MDPE main in across U90C . Provisional alignment of temporary main is south of the existing and proposed U90C.<br><br>Install 90mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as diversion to existing 90mm MDPE main. Main to be laid in Craibstone South Footpath and as 2 x 90mm HPPE mains with 30mm insulation within 200mm DI sleeves through U90C Tulloch Road Overbridge.<br><br>Dismantle as required or abandon redundant 90mm MDPE pipe |        | Review diversion design.                                                 | Review diversion design.                                                                               |                                  | (DOMS)<br>4 Weeks<br>(Traffic Management) |                         |
|                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |                                                                          | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  |                                           |                         |
|                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                       |                                  |                                           |                         |
|                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                        |                                  |                                           |                         |
|                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        | Undertake any required temporary protection works.                       |                                                                                                        |                                  |                                           |                         |
| Provide traffic management.                                                        | Agree traffic management.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |        |                                                                          |                                                                                                        |                                  |                                           |                         |



## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                     | Group* | Main Works by Company                                                                                                                                               | Works by Statutory Undertakers', Private Apparatus owners and others affected   | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                              |        |                                                                                                                                                                     |                                                                                 |                                  |                                    |                         |
|                                                             | <p>across AWPR Northern Leg carriageway at approx. chainage 316+100.</p> <p>Dismantle as requested or abandon redundant 90mm MDPE supply pipe to sunnybank cottages once property demolished.</p> <p>Install 90mm HPPE supply pipe to Gaughburn Cottage.</p> |        | <p>Lay ducts within structures as required to facilitate laying of Scottish Water apparatus</p> <p>Duct sizes and type to be to requirements of Scottish Water.</p> | <p>Undertake all excavation and install new pipes and associated apparatus.</p> |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                              |        |                                                                                                                                                                     | Undertake connection and reinstatement works.                                   |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                              |        |                                                                                                                                                                     | Inspect and supervise.                                                          |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                              |        |                                                                                                                                                                     | Testing and commissioning.                                                      |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                              |        | Dismantle as required or abandon redundant apparatus                                                                                                                |                                                                                 |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                | Location and Description                                                                                                                                                                                                                                                                                                    | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site                 | Works Period Estimate** |                                                                                                        |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Scottish Water Supply (SWW)</b>                                         |                                                                                                                                                                                                                                                                                                                             |        |                                                                          |                                                                               |                                  |                                                    |                         |                                                                                                        |
| SWW32<br>(SWW ref SWW37A)<br>Drg<br>B1033200/CD/<br>2700/SW/033            | <b>A96 Underbridge</b><br><br>No diversion work currently anticipated to existing 4" PVC main in north verge of A96 Aberdeen to Inverness Road.                                                                                                                                                                             | B      | Consult and comply with SWW regarding diversion requirements.            |                                                                               | N/A                              | N/A                                                | N/A                     |                                                                                                        |
|                                                                            |                                                                                                                                                                                                                                                                                                                             |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               |                                  |                                                    |                         |                                                                                                        |
|                                                                            |                                                                                                                                                                                                                                                                                                                             |        | Undertake any required temporary protection works.                       |                                                                               |                                  |                                                    |                         |                                                                                                        |
|                                                                            |                                                                                                                                                                                                                                                                                                                             |        | Provide traffic management.                                              | Agree traffic management.                                                     |                                  |                                                    |                         |                                                                                                        |
| SWW33<br>(SWW ref SWW37B and SWW37D)<br>Drg<br>B1033200/CD/<br>2700/SW/070 | <b>A96 Craibstone Roundabout</b><br><br>Install 110mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 4" PVC main in north verge of A96 Aberdeen to Inverness Road. Main to be laid in outer verge of new Craibstone Roundabout (north side) and | B      |                                                                          | Design diversion                                                              | 4 Weeks                          | 4 Weeks (DOMS)<br><br>4 Weeks (Traffic Management) | 6 Weeks                 |                                                                                                        |
|                                                                            |                                                                                                                                                                                                                                                                                                                             |        |                                                                          | Review diversion design.                                                      |                                  |                                                    |                         | Review diversion design.                                                                               |
|                                                                            |                                                                                                                                                                                                                                                                                                                             |        |                                                                          |                                                                               |                                  |                                                    |                         | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                 | Group* | Main Works by Company                                                                                                                                                                                                                                                                                                                                                                                                 | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                            | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                          |        |                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                          |                                  |                                    |                         |
|                                                             | <p>across Kirkhill Industrial estate Link Road carriageways (east and west sides) within 150mm DI sleeves with additional 150mm DI sleeve at each crossing as spare duct.</p> <p>Dismantle as required or abandon redundant 4" PVC pipework.</p> <p>Protection of existing 100mm/200mm PVC main at Junction with A96 and Dyce Drive.</p> |        | <p>Consult and comply with SWW regarding diversion requirements.</p> <p>Agree measures to safeguard existing apparatus with Statutory Undertaker</p> <p>Undertake any required temporary protection works.</p> <p>Provide traffic management.</p> <p>Lay ducts within structures as required to facilitate laying of Scottish Water apparatus</p> <p>Duct sizes and type to be to requirements of Scottish Water.</p> | <p>Procure apparatus for diversion.</p> <p>Agree traffic management.</p> <p>Undertake all excavation and install new pipes and associated apparatus.</p> |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference         | Location and Description                                                                                                                                                                                                                                                                                               | Group* | Main Works by Company                                | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                                  |                                                                                                                                                                                                                                                                                                                        |        |                                                      |                                                                                                        |                                  |                                    |                         |
|                                                                     |                                                                                                                                                                                                                                                                                                                        |        |                                                      | Undertake connection and reinstatement works.                                                          |                                  |                                    |                         |
|                                                                     |                                                                                                                                                                                                                                                                                                                        |        |                                                      | Inspect and supervise.                                                                                 |                                  |                                    |                         |
|                                                                     |                                                                                                                                                                                                                                                                                                                        |        |                                                      | Testing and commissioning.                                                                             |                                  |                                    |                         |
|                                                                     |                                                                                                                                                                                                                                                                                                                        |        | Dismantle as required or abandon redundant apparatus |                                                                                                        |                                  |                                    |                         |
| SWW34<br>(SWW ref SWW37C and SWW37D)<br>Drg B1033200/CD/2700/SW/070 | <b>A96 Craibstone roundabout</b><br><br>Install 500mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 18" PVC main in north verge and thence south side of A96 Aberdeen to Inverness Road. Main to be laid in outer verge of new Craibstone | B      |                                                      | Design diversion                                                                                       | 4 Weeks                          | 4 Weeks (DOMS)                     | N/A                     |
|                                                                     |                                                                                                                                                                                                                                                                                                                        |        | Review diversion design.                             | Review diversion design.                                                                               |                                  | 4 Weeks (Traffic Management)       |                         |
|                                                                     |                                                                                                                                                                                                                                                                                                                        |        |                                                      | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Group* | Main Works by Company                                                                                                                                                                                                                                                                                                                                                                                                 | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                            | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                          |                                  |                                    |                         |
|                                                             | <p>Roundabout (south side) including across new A96 Craibstone Junction Link Road carriageways (east and west sides) and across existing A96 west of new roundabout where crossing to comprise 2 x 500mm HPPE SDR17 mains.</p> <p>Dismantle as required or abandon redundant 18" PVC pipework.</p> <p><b>Section of Trunk Main between point A and B as shown on drawing B1033200/CD/2700/SW/70 to be completed in advance by others</b></p> <p>Protection of existing 150mm PVC main at Junction with A96 and Dyce Drive.</p> |        | <p>Consult and comply with SWW regarding diversion requirements.</p> <p>Agree measures to safeguard existing apparatus with Statutory Undertaker</p> <p>Undertake any required temporary protection works.</p> <p>Provide traffic management.</p> <p>Lay ducts within structures as required to facilitate laying of Scottish Water apparatus</p> <p>Duct sizes and type to be to requirements of Scottish Water.</p> | <p>Procure apparatus for diversion.</p> <p>Agree traffic management.</p> <p>Undertake all excavation and install new pipes and associated apparatus.</p> |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                            | Group* | Main Works by Company                                | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                     |        |                                                      |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                     |        |                                                      | Undertake connection and reinstatement works.                                                          |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                     |        |                                                      | Inspect and supervise.                                                                                 |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                     |        |                                                      | Testing and commissioning.                                                                             |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                     |        | Dismantle as required or abandon redundant apparatus |                                                                                                        |                                  |                                    |                         |
| SWW35<br>(SWW ref SWW37 )<br>Drg B1033200/CD/2700/SW/034    | <b>U53C Chapel of Stoneywood to Newton to Kirkhill Road</b><br><br>Install 160mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 4" PVC main on U53C. Main to be laid within 200mm DI sleeve across AWPR | B      |                                                      | Design diversion                                                                                       | 4 Weeks                          | 6 Weeks (Statutory Notice)         | 6 Weeks                 |
|                                                             |                                                                                                                                                                                                                                                                                     |        | Review diversion design.                             | Review diversion design.                                                                               |                                  | 4 Weeks (DOMS)                     |                         |
|                                                             |                                                                                                                                                                                                                                                                                     |        |                                                      | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  | 4 Weeks (Traffic Management)       |                         |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                      | Group* | Main Works by Company                                                                                                                                                                                                                                                                                                                                                                                                 | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                               |        |                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                               |                                  |                                    |                         |
|                                                             | <p>Northern Leg carriageway at approx. chainage 317+890. Additional 200mm DI sleeve to be laid as spare at same location.</p> <p>Dismantle as required or abandon redundant 4" PVC and 100mm DI pipework.</p> |        | <p>Consult and comply with SWW regarding diversion requirements.</p> <p>Agree measures to safeguard existing apparatus with Statutory Undertaker</p> <p>Undertake any required temporary protection works.</p> <p>Provide traffic management.</p> <p>Lay ducts within structures as required to facilitate laying of Scottish Water apparatus</p> <p>Duct sizes and type to be to requirements of Scottish Water.</p> | <p>Procure apparatus for diversion.</p>                                       |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                           | Group* | Main Works by Company                                         | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                    |        |                                                               |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                    |        |                                                               | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                    |        |                                                               | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                    |        |                                                               | Testing and commissioning.                                                    |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                    |        | Dismantle as required or abandon redundant apparatus          |                                                                               |                                  |                                    |                         |
| SWW36<br>(SWW ref SWW38)<br>Drg B1033200/CD/2700/SW/040     | <b>Pitmedden Road</b><br>Install 110mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as diversion to existing 4" PVC main between north and south of AWPR Mainline in west verge of Pitmedden Road under | B      |                                                               | Design diversion                                                              | 4 Weeks                          | 4 Weeks (DOMS)                     | 4 Weeks                 |
|                                                             |                                                                                                                                                                                                                                                    |        | Review diversion design.                                      | Review diversion design.                                                      |                                  | 4 Weeks (Traffic Management)       |                         |
|                                                             |                                                                                                                                                                                                                                                    |        | Consult and comply with SWW regarding diversion requirements. | Procure apparatus for diversion.                                              |                                  |                                    |                         |



Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                       | Group* | Main Works by Company                                                                                                                                                                                                                                                                                                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                |        |                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                              |                                  |                                    |                         |
|                                                             | Pitmedden Road underbridge.<br><br>Dismantle as required or abandon redundant 4" PVC pipe at chainage 322+540. |        | Agree measures to safeguard existing apparatus with Statutory Undertaker<br><br>Undertake any required temporary protection works.<br><br>Provide traffic management.<br><br>Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Agree traffic management.<br><br>Undertake all excavation and install new pipes and associated apparatus.<br><br>Undertake connection and reinstatement works.<br><br>Inspect and supervise. |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference    | Location and Description                                                                                                                                                                                                                                                                                                                                                              | Group* | Main Works by Company                                | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site                 | Works Period Estimate** |
|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                             |                                                                                                                                                                                                                                                                                                                                                                                       |        |                                                      |                                                                                                        |                                  |                                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                       |        |                                                      | Testing and commissioning.                                                                             |                                  |                                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                       |        | Dismantle as required or abandon redundant apparatus |                                                                                                        |                                  |                                                    |                         |
| SWW37<br>(SWW ref SWW39)<br>Drg<br>B1033200/CD/<br>2700/SW/042 | <b>B977 Echt to Balmedie Road (Goval Villa)</b><br><br>Install 110mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as diversion to existing 100mm PVC main.<br><br>Main to be laid in west verge of B977 and as 1 x 110mm HPPE mains with 30mm insulation within 250mm DI sleeve, plus 1 x 250mm spare sleeve through B977 West Overbridge. | B      |                                                      | Design diversion                                                                                       | 4 Weeks                          | 4 Weeks (DOMS)<br><br>4 Weeks (Traffic Management) | 18 Weeks                |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                       |        |                                                      | Review diversion design.                                                                               |                                  |                                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                       |        |                                                      | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  |                                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                       |        |                                                      | Consult and comply with SWW regarding diversion requirements.                                          |                                  |                                                    |                         |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                       | Group* | Main Works by Company                                                                                                                                                                                                                                                                                                                            | Works by Statutory Undertakers', Private Apparatus owners and others affected                                                                                                                       | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                |        |                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                     |                                  |                                    |                         |
|                                                             | <p>Install 25mm MDPE service connection from B977 at approx. chainage 0+190 along east verge of existing B977 (Goval Villa Access Road).</p> <p>Dismantle as required or abandon redundant 100mm PVC pipe across AWPR Northern Leg carriageway at approx. chainage 323+520</p> |        | <p>Agree measures to safeguard existing apparatus with Statutory Undertaker</p> <p>Undertake any required temporary protection works.</p> <p>Provide traffic management.</p> <p>Lay ducts within structures as required to facilitate laying of Scottish Water apparatus</p> <p>Duct sizes and type to be to requirements of Scottish Water.</p> | <p>Agree traffic management.</p> <p>Undertake all excavation and install new pipes and associated apparatus.</p> <p>Undertake connection and reinstatement works.</p> <p>Inspect and supervise.</p> |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference    | Location and Description                                                                                                                                                                                                                                                                                                                                                        | Group* | Main Works by Company                                         | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site                 | Works Period Estimate** |
|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                             |                                                                                                                                                                                                                                                                                                                                                                                 |        |                                                               |                                                                                                        |                                  |                                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                 |        |                                                               | Testing and commissioning.                                                                             |                                  |                                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                 |        | Dismantle as required or abandon redundant apparatus          |                                                                                                        |                                  |                                                    |                         |
| SWW38<br>(SWW ref SWW40)<br>Drg<br>B1033200/CD/<br>2700/SW/042 | <b>Goval West</b><br><br>Install 600mm DI main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 24" AC main across AWPR Northern Leg carriageway at approx. chainage 324+030. Main to be laid as 2 x 600mm DI under AWPR Northern Leg carriageway at approx. chainage 324+000<br><br>Dismantle as required or abandon | B      |                                                               | Design diversion                                                                                       | 4 Weeks                          | 4 Weeks (DOMS)<br><br>4 Weeks (Traffic Management) | 18 Weeks                |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                 |        | Review diversion design.                                      | Review diversion design.                                                                               |                                  |                                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                 |        |                                                               | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  |                                                    |                         |
|                                                                |                                                                                                                                                                                                                                                                                                                                                                                 |        | Consult and comply with SWW regarding diversion requirements. | Procure apparatus for diversion.                                                                       |                                  |                                                    |                         |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference                                                                                                  | Location and Description   | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                                                                                                                           |                            |        |                                                                          |                                                                               |                                  |                                    |                         |
|                                                                                                                                                              | redundant 24" AC pipework. |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               |                                  |                                    |                         |
| Undertake any required temporary protection works.                                                                                                           |                            |        |                                                                          |                                                                               |                                  |                                    |                         |
| Provide traffic management.                                                                                                                                  |                            |        | Agree traffic management.                                                |                                                                               |                                  |                                    |                         |
| Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. |                            |        | Undertake all excavation and install new pipes and associated apparatus. |                                                                               |                                  |                                    |                         |
|                                                                                                                                                              |                            |        | Undertake connection and reinstatement works.                            |                                                                               |                                  |                                    |                         |
|                                                                                                                                                              |                            |        | Inspect and supervise.                                                   |                                                                               |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference               | Location and Description                                                                                                                                                                                                                                                                                                                                                               | Group* | Main Works by Company                                | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site             | Works Period Estimate** |
|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                                        |                                                                                                                                                                                                                                                                                                                                                                                        |        |                                                      |                                                                                                        |                                  |                                                |                         |
|                                                                           |                                                                                                                                                                                                                                                                                                                                                                                        |        |                                                      | Testing and commissioning.                                                                             |                                  |                                                |                         |
|                                                                           |                                                                                                                                                                                                                                                                                                                                                                                        |        | Dismantle as required or abandon redundant apparatus |                                                                                                        |                                  |                                                |                         |
| SWW39<br>(SWW ref SWW41 and SWW50)<br>Drg B1033200/CD/2700/SW/044 and 045 | <b>B977 Echt to Balmedie Road (Corsehill Cottage and Goval East Roundabout)</b><br><br>Install 110mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 100mm PVC main at junction of New B977 Echt to Balmedie Road (4) and New B977 Echt to Balmedie Slip Road. Main to be laid in north verge of new links. | B      |                                                      | Design diversion                                                                                       | 4 Weeks                          | 4 Weeks (DOMS)<br>4 Weeks (Traffic Management) | 18 Weeks                |
|                                                                           |                                                                                                                                                                                                                                                                                                                                                                                        |        |                                                      | Review diversion design.                                                                               |                                  |                                                |                         |
|                                                                           |                                                                                                                                                                                                                                                                                                                                                                                        |        |                                                      | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  |                                                |                         |
|                                                                           |                                                                                                                                                                                                                                                                                                                                                                                        |        |                                                      | Consult and comply with SWW regarding diversion requirements.                                          |                                  |                                                |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                     | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                              |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             | Dismantle as required or abandon redundant 100mm PVC pipework.<br>Protection of existing 100mm PVC main across new B977 Echt to Balmedie Road (3) adjacent to Beech Cottage. |        | Agree measures to safeguard existing apparatus with Statutory Undertaker                                                                                     |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                              |        | Undertake any required temporary protection works.                                                                                                           |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                              |        | Provide traffic management.                                                                                                                                  | Agree traffic management.                                                     |                                  |                                    |                         |
|                                                             |                                                                                                                                                                              |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
| SWW40<br>(SWW ref SWW42)<br>Drg                             | <b>B977 Echt to Balmedie Road / Newmachar Church Road Link Road</b><br><br>Install 160/110mm HPPE SDR17                                                                      | B      |                                                                                                                                                              | Design diversion<br><br>Review diversion design.                              | 4 Weeks                          | 4 Weeks (DOMS)<br>4 Weeks (Traffic | 18 Weeks                |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |                                                                          |                                                                                                        |                                  |                                    |                         |
| B1033200/CD/<br>2700/SW/046                                 | <p>main and associated equipment including chambers and valves etc. as required as diversion to existing 100/150mm PVC main.</p> <p>Main to be laid in south verge of Newmacher Church Road Link Road, and west verge of New B977 Echt to Balmedie Road (5), and as 2 x 160mm HPPE mains with 30mm insulation within 250mm DI sleeve, through B977 East Overbridge.</p> <p>Install 32mm MDPE service connection from northern junction with Newmacher Church Road to "Laurels" property".</p> <p>Install 90mm MDPE service connection from southern junction between Newmacher Church</p> |        |                                                                          | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  | Management)                        |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                       |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        | Undertake any required temporary protection works.                       |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        | Provide traffic management.                                              | Agree traffic management.                                                                              |                                  |                                    |                         |



## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                           | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site                 | Works Period Estimate** |                                                                                                        |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                    |        |                                                                                                                                                              |                                                                               |                                  |                                                    |                         |                                                                                                        |
|                                                             | Road and B977 to "Birchville" Property.<br><br>Dismantle as required or abandon redundant 100mm PVC pipe across AWPR Northern Leg carriageway at approx. chainages 325+600 and 325+960.                                                                                                                                                                                                            |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                                    |                         |                                                                                                        |
| SWW41<br>(SWW ref SWW43)<br>Drg B1033200/CD/2700/SW/050     | <b>South of B999</b><br><br>Install 500mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 18" AC main across AWPR Northern Leg carriageway at approx. chainage 329+260. Main to be laid as 2 x 600mm HPPE SDR17 under AWPR Northern Leg carriageway at approx. chainage 329+290<br><br>Dismantle as required or abandon | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks (DOMS)<br><br>4 Weeks (Traffic Management) | 18 Weeks                |                                                                                                        |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                    |        |                                                                                                                                                              | Review diversion design.                                                      |                                  |                                                    |                         | Review diversion design.                                                                               |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                    |        |                                                                                                                                                              |                                                                               |                                  |                                                    |                         | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                    |        |                                                                                                                                                              | Consult and comply with SWW regarding diversion requirements.                 |                                  |                                                    |                         | Procure apparatus for diversion.                                                                       |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                           | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                    |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             | redundant 18" AC pipework.                                                                                         |        | Agree measures to safeguard existing apparatus with Statutory Undertaker                                                                                     |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                    |        | Undertake any required temporary protection works.                                                                                                           |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                    |        | Provide traffic management.                                                                                                                                  | Agree traffic management.                                                     |                                  |                                    |                         |
|                                                             |                                                                                                                    |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
| SWW42<br>(SWW ref SWW44)<br>Drg                             | <b>B999 / Cranfield</b><br><br>Install 90mm HPPE SDR17 main and associated equipment including chambers and valves | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks (DOMS)                     | 18 Weeks                |
|                                                             |                                                                                                                    |        | Review diversion design.                                                                                                                                     | Review diversion design.                                                      |                                  | 4 Weeks (Traffic                   |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                          | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                   |        |                                                                          |                                                                                                        |                                  |                                    |                         |
| B1033200/CD/2700/SW/051 and 52                              | etc. as required as permanent diversion to existing 90mm PVC main between B999 at Cranfield and Blackdog Burn (south of Chainage 330+100. Main to be laid out with LMA alongside Cranfield Burn.<br><br>Dismantle as required or abandon redundant 90mm PVC pipe. |        |                                                                          | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  | Management                         |                         |
|                                                             |                                                                                                                                                                                                                                                                   |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                       |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                   |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                   |        | Undertake any required temporary protection works.                       |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                   |        | Provide traffic management.                                              | Agree traffic management.                                                                              |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference          | Location and Description                                                                                                                                                                                                                                                                                                                                     | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site                 | Works Period Estimate** |                                                                                                        |
|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Scottish Water Supply (SWW)</b>                                   |                                                                                                                                                                                                                                                                                                                                                              |        |                                                                                                                                                              |                                                                               |                                  |                                                    |                         |                                                                                                        |
|                                                                      |                                                                                                                                                                                                                                                                                                                                                              |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                                    |                         |                                                                                                        |
| SWW43<br>(SWW ref SWW45)<br><br>Drg<br>B1033200/CD/<br>2700/SWW/ 054 | <b>Blackdog Junction</b><br><br>Install 90mm HPPE main and associated equipment including chambers and valves etc. as required under the AWPR carriageway as permanent diversion to existing 90mm MDPE main along existing A90. Main to be laid as 2x90mm HPPE SDR17 mains each within 150mm DI sleeves under proposed mainline at approx. chainage 330780m, | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks (DOMS)<br><br>4 Weeks (Traffic Management) | 18 Weeks                |                                                                                                        |
|                                                                      |                                                                                                                                                                                                                                                                                                                                                              |        |                                                                                                                                                              | Review diversion design.                                                      |                                  |                                                    |                         | Review diversion design.                                                                               |
|                                                                      |                                                                                                                                                                                                                                                                                                                                                              |        |                                                                                                                                                              |                                                                               |                                  |                                                    |                         | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |
|                                                                      |                                                                                                                                                                                                                                                                                                                                                              |        |                                                                                                                                                              | Consult and comply with SWW regarding diversion requirements.                 |                                  |                                                    |                         | Procure apparatus for diversion.                                                                       |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                            | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                     |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             | onto Middlefield Steadings Access Track, then onto Wester Hatton Access Road,<br><br>Dismantle as required or abandon redundant 90mm MDPE pipework. |        | Agree measures to safeguard existing apparatus with Statutory Undertaker                                                                                     |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                     |        | Undertake any required temporary protection works.                                                                                                           |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                     |        | Provide traffic management.                                                                                                                                  | Agree traffic management.                                                     |                                  |                                    |                         |
|                                                             |                                                                                                                                                     |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
| SWW44<br>(SWW ref SWW16A and 16T)                           | <b>Burnhead</b><br><br>In advance of main works install 110mm HPPE SDR17 main and associated equipment including                                    | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks (DOMS)                     | 18 Weeks                |
|                                                             |                                                                                                                                                     |        | Review diversion design.                                                                                                                                     | Review diversion design.                                                      |                                  | 4 Weeks (Traffic                   |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |                                                                          |                                                                                                        |                                  |                                    |                         |
| Drg<br>B1033200/CD/<br>2700/SW/015<br>and 058               | chambers and valves etc. as required as temporary diversion to existing 4" PVC main in existing U63K Maryculter Road.<br>Temporary main to be laid across AWPR Southern Leg carriageway at approx. chainage 200+480.<br><br>Also install 110mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as temporary diversion to existing 4" AC main in existing C5K Lochton to Nigg Road. Temporary main to be laid across AWPR Southern Leg carriageway at approx. chainage 200+630.<br><br>Install 160mm HPPE SDR17 main and associated equipment including chambers and valves |        |                                                                          | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  | Management)                        |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                       |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        | Undertake any required temporary protection works.                       |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        | Provide traffic management.                                              | Agree traffic management.                                                                              |                                  |                                    |                         |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Group*   | Main Works by Company                                                                                                                                               | Works by Statutory Undertakers', Private Apparatus owners and others affected   | Design and Material Order Period | Notification Period to Attend Site             | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------|------------------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |                                                                                                                                                                     |                                                                                 |                                  |                                                |                         |
|                                                             | <p>etc. as required in west verge of new C5K Lochton to Nigg Road (with connection to existing 4" AC main at Burnhead) and south verge of new C63K Maryculter Road (with connections to existing 4" PVC main north of AWPR Southern Leg carriageway at approx. chainage 200+370 and 4" AC main at Clyanthus Lodge)</p> <p>Main to be laid as 2 x 160mm HPPE each with 30mm insulation within 250mm DI sleeves through C5K overbridge.</p> <p>Dismantle as required or abandon redundant former 4" and temporary diversion pipework</p> |          | <p>Lay ducts within structures as required to facilitate laying of Scottish Water apparatus</p> <p>Duct sizes and type to be to requirements of Scottish Water.</p> | <p>Undertake all excavation and install new pipes and associated apparatus.</p> |                                  |                                                |                         |
| <p>SWW45<br/>(SWW ref<br/>SWW17)<br/>Drg</p>                | <p><b>Newlands, C30K Hillside to Batchart Road</b></p> <p>Install 160mm HPPE SDR17 main and associated equipment</p>                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>B</p> | <p>Review diversion design.</p>                                                                                                                                     | <p>Design diversion</p> <p>Review diversion design.</p>                         | <p>4 Weeks</p>                   | <p>4 Weeks (DOMS)</p> <p>4 Weeks (Traffic)</p> | <p>18 Weeks</p>         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        |                                                                          |                                                                                                        |                                  |                                    |                         |
| B1033200/CD/<br>2700/SW/060                                 | including chambers and valves etc. as required as permanent diversion to existing 4" AC main in existing carriageway. New main to be laid in west verge of new C30K with connection to existing main in north verge of Sunnyside Farmhouse Access Road. Main to be laid with 30mm insulation within 250mm DI sleeve through west verge of C12K overbridge. Additional 250mm DI sleeve to be laid as spare at same location.<br><br>Install 32mm service main to Newlands in east verge of existing C30K.<br><br>Dismantle as required or abandon redundant 4" AC pipework. |        |                                                                          | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  | Management)                        |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                       |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        | Undertake any required temporary protection works.                       |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        | Provide traffic management.                                              | Agree traffic management.                                                                              |                                  |                                    |                         |



## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site                 | Works Period Estimate** |                                                                                                        |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                         |        |                                                                                                                                                              |                                                                               |                                  |                                                    |                         |                                                                                                        |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                         |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                                    |                         |                                                                                                        |
| SWW46<br>(SWW ref SWW18)<br>Drg B1033200/CD/2700/SW/061     | <b>Bishopston</b><br><br>Install 280mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 250mm DI main across AWPR Southern Leg carriageway at approx. chainage 202+830. Main to be laid as 2 x 280mm HPPE SDR17 each within 350mm DI sleeve across AWPR Southern Leg carriageway at approx. chainage 202+840. | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks (DOMS)<br><br>4 Weeks (Traffic Management) | 18 Weeks                |                                                                                                        |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                         |        |                                                                                                                                                              | Review diversion design.                                                      |                                  |                                                    |                         | Review diversion design.                                                                               |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                         |        |                                                                                                                                                              |                                                                               |                                  |                                                    |                         | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                         |        |                                                                                                                                                              | Consult and comply with SWW regarding diversion requirements.                 |                                  |                                                    |                         | Procure apparatus for diversion.                                                                       |

Part 4: Specification

**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                     | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                              |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             | Dismantle as required or abandon redundant 250mm DI pipework.                                                |        | Agree measures to safeguard existing apparatus with Statutory Undertaker                                                                                     |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                              |        | Undertake any required temporary protection works.                                                                                                           |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                              |        | Provide traffic management.                                                                                                                                  | Agree traffic management.                                                     |                                  |                                    |                         |
|                                                             |                                                                                                              |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
| SWW47<br>(SWW ref SWW19A and 19T)                           | <b>Bothiebrigg</b><br><br>In advance of main works, if required install 160mm HPPE SDR17 main and associated | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks (DOMS)                     | 18 Weeks                |
|                                                             |                                                                                                              |        | Review diversion design.                                                                                                                                     | Review diversion design.                                                      |                                  | 4 Weeks (Traffic                   |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        |                                                                          |                                                                                                        |                                  |                                    |                         |
| Drg<br>B1033200/CD/<br>2700/SW/061                          | equipment including chambers and valves etc. as required as temporary diversion to existing 6" PVC main between Bothiebrigg Garage and Whistlebrae Farmhouse. Temporary main to be laid across AWPR Southern Leg carriageway at approx. chainage 206+300.<br><br>Install 160mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 6" PVC main between Bothiebrigg Garage and Whistlebrae Farmhouse. Main to be laid in west verge of new C5K Schoolhill to Lochton to Nigg Road and thence within LMA on north side of AWPR to connect with existing main at Whistlebrae |        |                                                                          | <i>Obtain necessary wayleaves and section 37 consents</i> (where required and not previously complete) |                                  | Management                         |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                       |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        | Undertake any required temporary protection works.                       |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        | Provide traffic management.                                              | Agree traffic management.                                                                              |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference     | Location and Description                                                                                                                                                                                                                                                                                                                                              | Group* | Main Works by Company                                                                                                                                               | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site             | Works Period Estimate** |                                                                                                        |
|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Scottish Water Supply (SWW)</b>                              |                                                                                                                                                                                                                                                                                                                                                                       |        |                                                                                                                                                                     |                                                                               |                                  |                                                |                         |                                                                                                        |
|                                                                 | <p>Farmhouse.</p> <p>Main to be laid with 30mm insulation within 250mm DI sleeve through west verge of Hatton overbridge. Additional 250mm DI sleeve to be laid as spare at same location.</p> <p>Dismantle as required or abandon redundant 6" PVC pipework.</p>                                                                                                     |        | <p>Lay ducts within structures as required to facilitate laying of Scottish Water apparatus</p> <p>Duct sizes and type to be to requirements of Scottish Water.</p> | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                                |                         |                                                                                                        |
| SWW48<br>(SWW ref SWW19)<br>Drg B1033200/CD/2700/SW/065 and 068 | <b>U168K Craighill (Red Moss) Road</b><br>Install 600mm DI main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 600mm DI main between Mains of Charleston and Loirston Burn. Main to be laid in west verge of existing U168K carriageway.<br>Dismantle as required or abandon redundant 600mm DI pipework. | B      |                                                                                                                                                                     | Design diversion                                                              | 4 Weeks                          | 4 Weeks (DOMS)<br>4 Weeks (Traffic Management) | 18 Weeks                |                                                                                                        |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                       |        |                                                                                                                                                                     | Review diversion design.                                                      |                                  |                                                |                         | Review diversion design.                                                                               |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                       |        |                                                                                                                                                                     |                                                                               |                                  |                                                |                         | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |
|                                                                 |                                                                                                                                                                                                                                                                                                                                                                       |        |                                                                                                                                                                     | Consult and comply with SWW regarding diversion requirements.                 |                                  |                                                |                         | Procure apparatus for diversion.                                                                       |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                             | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                      |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                      |        | Agree measures to safeguard existing apparatus with Statutory Undertaker                                                                                     |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                      |        | Undertake any required temporary protection works.                                                                                                           |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                      |        | Provide traffic management.                                                                                                                                  | Agree traffic management.                                                     |                                  |                                    |                         |
|                                                             |                                                                                                      |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
| SWW49<br>(SWW ref SWW19B)<br>Drg                            | <b>U168K Craighill (Red Moss) Road</b><br><br>Install 160mm HPPE SDR17 main and associated equipment | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks (DOMS)                     | 18 Weeks                |
|                                                             |                                                                                                      |        | Review diversion design.                                                                                                                                     | Review diversion design.                                                      |                                  | 4 Weeks (Traffic                   |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                                       | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |                                                                          |                                                                                                        |                                  |                                    |                         |
| B1033200/CD/2700/SW/065 and 068                             | including chambers and valves etc. as required as permanent diversion to existing 6" PVC main between Charleston Cottage and Bothiebrig. Diversion of main to be in two sections. First section of main to be laid in west verge of existing U168K carriageway. Second section to be laid across Charleston Junction Northbound Diverge Slip Road at approx. chainage 0+420<br><br>Dismantle as required or abandon redundant 6" PVC pipework. |        |                                                                          | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  | Management)                        |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                       |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                |        | Undertake any required temporary protection works.                       |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                |        | Provide traffic management.                                              | Agree traffic management.                                                                              |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                                                                                                                                                                                                                                             | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site                 | Works Period Estimate** |                                                                                                        |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                                                                                                                                              |                                                                               |                                  |                                                    |                         |                                                                                                        |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                      |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                                    |                         |                                                                                                        |
| SWW50<br>(SWW ref SWW20)<br>Drg B1033200/CD/2700/SW/066     | <b>U166K Old Stonehaven Road</b><br><br>Install 90mm HPPE SDR17 main and associated equipment including chambers and valves etc. as required as permanent diversion to existing 2" AC main across AWPR Southern Leg carriageway (A956 Wellington Road) at approx. chainage 206+970. Main to be laid in west verge of U166K north of AWPR crossing and east verge south of AWPR crossing. Main to be laid as 2 x 90mm HPPE SDR17 each | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks (DOMS)<br><br>4 Weeks (Traffic Management) | 18 Weeks                |                                                                                                        |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                                                                                                                                              | Review diversion design.                                                      |                                  |                                                    |                         | Review diversion design.                                                                               |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                                                                                                                                              |                                                                               |                                  |                                                    |                         | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |
|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |                                                                                                                                                              | Consult and comply with SWW regarding diversion requirements.                 |                                  |                                                    |                         | Procure apparatus for diversion.                                                                       |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                   | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                            |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             | within 150mm DI sleeve across AWPR Southern Leg carriageway at approx. chainage 206+960.<br><br>Dismantle as required or abandon redundant 2" AC pipework. |        | Agree measures to safeguard existing apparatus with Statutory Undertaker                                                                                     |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                            |        | Undertake any required temporary protection works.                                                                                                           |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                            |        | Provide traffic management.                                                                                                                                  | Agree traffic management.                                                     |                                  |                                    |                         |
|                                                             |                                                                                                                                                            |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
| SWW51<br>(SWW ref SWW21)<br>Drg                             | <b>Loirston Burn</b><br><br>No diversion work currently anticipated to existing 600mm DI main across AWPR Southern Leg                                     | B      |                                                                                                                                                              | Design diversion                                                              | 4 Weeks                          | 4 Weeks (DOMS)                     | 2 Weeks                 |
|                                                             |                                                                                                                                                            |        | Review diversion design.                                                                                                                                     | Review diversion design.                                                      |                                  | 2 Weeks (Traffic                   |                         |



## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                              | Group* | Main Works by Company                                                    | Works by Statutory Undertakers', Private Apparatus owners and others affected                          | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                       |        |                                                                          |                                                                                                        |                                  |                                    |                         |
| B1033200/CD/<br>2700/SW/066                                 | carriageway (A956 Wellington Road) at approx. chainage 207+100, although existing AV in south verge may need relocation to suit revised verge levels. |        |                                                                          | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |                                  | Management)                        |                         |
|                                                             |                                                                                                                                                       |        | Consult and comply with SWW regarding diversion requirements.            | Procure apparatus for diversion.                                                                       |                                  |                                    |                         |
|                                                             |                                                                                                                                                       |        | Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                       |        | Undertake any required temporary protection works.                       |                                                                                                        |                                  |                                    |                         |
|                                                             |                                                                                                                                                       |        | Provide traffic management.                                              | Agree traffic management.                                                                              |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                             | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |                                                                                                        |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                      |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |                                                                                                        |
|                                                             |                                                                                                                                                                      |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |                                                                                                        |
| SWW52<br>(SWW ref SWW22)<br>Drg B1033200/CD/2700/SW/069     | <b>Newton of Charleston</b><br><br>No diversion work currently anticipated to existing 600mm DI and 12" PVC mains across A90 carriageways at approx. chainage 2+100. | B      |                                                                                                                                                              | Design diversion                                                              | N/A                              | N/A                                | N/A                     |                                                                                                        |
|                                                             |                                                                                                                                                                      |        |                                                                                                                                                              | Review diversion design.                                                      |                                  |                                    |                         | Review diversion design.                                                                               |
|                                                             |                                                                                                                                                                      |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         | <i>Obtain necessary wayleaves and section 37 consents (where required and not previously complete)</i> |
|                                                             |                                                                                                                                                                      |        |                                                                                                                                                              | Consult and comply with SWW regarding diversion requirements.                 |                                  |                                    |                         | Procure apparatus for diversion.                                                                       |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                 | Group* | Main Works by Company                                                                                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                          |        |                                                                                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                                                                          |        | Agree measures to safeguard existing apparatus with Statutory Undertaker                                                                                     |                                                                               |                                  |                                    |                         |
|                                                             |                                                                          |        | Undertake any required temporary protection works.                                                                                                           |                                                                               |                                  |                                    |                         |
|                                                             |                                                                          |        | Provide traffic management.                                                                                                                                  | Agree traffic management.                                                     |                                  |                                    |                         |
|                                                             |                                                                          |        | Lay ducts within structures as required to facilitate laying of Scottish Water apparatus<br><br>Duct sizes and type to be to requirements of Scottish Water. | Undertake all excavation and install new pipes and associated apparatus.      |                                  |                                    |                         |
| SWW53<br>(SW Ref. SWW51)<br>Drg:                            | <b>A90 Water Mains Diversion</b><br><br>Potable main 90 mm diameter HPPE | B      | Agree measures to safeguard existing apparatus.                                                                                                              | Design diversion.                                                             | 3 Months                         | 3 Months                           | 10 weeks                |
|                                                             |                                                                          |        | Review diversion design.                                                                                                                                     | Review diversion design.                                                      |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                              | Group* | Main Works by Company                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-----------------------------------------------------------------------|--------|--------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                       |        |                                                              |                                                                               |                                  |                                    |                         |
| P246600/2700<br>/SW/003                                     |                                                                       |        | Consult and comply with statutory undertakers' requirements. |                                                                               |                                  |                                    |                         |
|                                                             |                                                                       |        |                                                              | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                             |                                                                       |        | Provide Traffic Management.                                  | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                             |                                                                       |        |                                                              | Install new associated equipment.                                             |                                  |                                    |                         |
|                                                             |                                                                       |        |                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                                                                       |        |                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                                                                       |        |                                                              | Test and commissioning.                                                       |                                  |                                    |                         |
|                                                             |                                                                       |        |                                                              | Abandon existing apparatus.                                                   |                                  |                                    |                         |
| SWW54<br>(SW Ref. SWW52)                                    | <b>A90 Water Mains Diversion</b><br>Potable main 110 mm Diameter HPPE | B      | Agree measures to safeguard existing apparatus.              | Design diversion                                                              | 3 Months                         | 3 Months                           | 6 Weeks                 |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                          |        |                                                                                              |                                                                               |                                  |                                    |                         |
| Drg:<br>P246600/2700<br>/SW/003                             |                          |        |                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                          |        | Review diversion design.<br><br>Consult and comply with statutory undertakers' requirements. | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                          |        |                                                                                              | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                             |                          |        | Provide Traffic Management.                                                                  | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                             |                          |        |                                                                                              | Install new associated equipment.                                             |                                  |                                    |                         |
|                                                             |                          |        |                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                          |        |                                                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                          |        |                                                                                              | Test and commissioning.                                                       |                                  |                                    |                         |
|                                                             |                          |        |                                                                                              | Abandon existing                                                              |                                  |                                    |                         |

## Part 4: Specification

## Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                                                                                                                                        | Group* | Main Works by Company                                                                                                                       | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                                                                                                                                                                 |        |                                                                                                                                             |                                                                               |                                  |                                    |                         |
|                                                             |                                                                                                                                                                                                                 |        |                                                                                                                                             | apparatus.                                                                    |                                  |                                    |                         |
| SWW54A<br>(SW Ref. SWW52A)<br>Drg: P246600/2700<br>/SW/004  | <b>A90 Water Mains</b><br>No diversion works anticipated to existing 250mm DI twin pipes at approx. mainline Ch. 240 as long as minimum cover to the existing apparatus is maintained.                          | B      | Consult and comply with Statutory Undertaker's requirements<br><br>Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               | N/A                              | TBC                                | N/A                     |
| SWW54B<br>(SW Ref. SWW52B)<br>Drg: P246600/2700<br>/SW/004  | <b>Existing Keir Farm Road (to east of Underpass) at proposed passing place</b><br>No diversion works anticipated to existing water apparatus as long as minimum cover to the existing apparatus is maintained. | B      | Consult and comply with Statutory Undertaker's requirements<br><br>Agree measures to safeguard existing apparatus with Statutory Undertaker |                                                                               | N/A                              | TBC                                | N/A                     |
| SWW55<br>(SW Ref. SWW53)                                    | <b>B977 Realignment Water Mains Diversion</b><br>Potable main 250 mm Diameter                                                                                                                                   | B      | Agree measures to safeguard existing apparatus.                                                                                             | Design diversion                                                              | 3 Months                         | 3 Months                           | 8 Weeks                 |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                          |        |                                                                                              |                                                                               |                                  |                                    |                         |
| Drg:<br>P246600/2700<br>/SW/005                             | HPPE                     |        |                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                          |        | Review diversion design.<br><br>Consult and comply with statutory undertakers' requirements. | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                          |        |                                                                                              | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                             |                          |        | Provide Traffic Management.                                                                  | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                             |                          |        |                                                                                              | Install new associated equipment.                                             |                                  |                                    |                         |
|                                                             |                          |        |                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                          |        |                                                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                          |        |                                                                                              | Test and commissioning.                                                       |                                  |                                    |                         |
|                                                             | Abandon existing         |        |                                                                                              |                                                                               |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                 | Group* | Main Works by Company                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                          |        |                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                                                                          |        |                                                                                              | apparatus.                                                                    |                                  |                                    |                         |
| SWW56<br>(SW Ref. SWW54)<br>Drg: P246600/2700 /SW/011       | <b>Dabrae Water Mains Diversion</b><br>Potable main 110 mm Diameter HPPE | B      | Agree measures to safeguard existing apparatus.                                              | Design diversion                                                              | 3 Months                         | 3 Months                           | 12 Weeks                |
|                                                             |                                                                          |        | Review diversion design.<br><br>Consult and comply with statutory undertakers' requirements. | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                                                                          |        |                                                                                              | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                             |                                                                          |        | Provide Traffic Management.                                                                  | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                             |                                                                          |        |                                                                                              | Install new associated equipment.                                             |                                  |                                    |                         |
|                                                             |                                                                          |        |                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                                                                          |        |                                                                                              | Undertake connection and reinstatement                                        |                                  |                                    |                         |



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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                     | Group* | Main Works by Company                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|------------------------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                                                                              |        |                                                                                              |                                                                               |                                  |                                    |                         |
|                                                             |                                                                              |        |                                                                                              | works.                                                                        |                                  |                                    |                         |
|                                                             |                                                                              |        |                                                                                              | Test and commissioning.                                                       |                                  |                                    |                         |
|                                                             |                                                                              |        |                                                                                              | Abandon existing apparatus.                                                   |                                  |                                    |                         |
| SWW57<br>(SW Ref. SWW55)<br>Drg: P246600/2700<br>/SW/012    | <b>Aikenshill Water Mains Diversion</b><br>Potable main 110 mm Diameter HPPE | B      | Agree measures to safeguard existing apparatus.                                              | Design diversion                                                              | 3 Months                         | 3 Months                           | 8 Weeks                 |
|                                                             |                                                                              |        | Review diversion design.<br><br>Consult and comply with statutory undertakers' requirements. | Review diversion design.                                                      |                                  |                                    |                         |
|                                                             |                                                                              |        |                                                                                              | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                             |                                                                              |        | Provide Traffic Management.                                                                  | Agree Traffic Management.                                                     |                                  |                                    |                         |
|                                                             |                                                                              |        |                                                                                              | Install new associated equipment.                                             |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference  | Location and Description                                                      | Group* | Main Works by Company                                                                        | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|--------------------------------------------------------------|-------------------------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                           |                                                                               |        |                                                                                              |                                                                               |                                  |                                    |                         |
|                                                              |                                                                               |        |                                                                                              | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                              |                                                                               |        |                                                                                              | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                              |                                                                               |        |                                                                                              | Test and commissioning.                                                       |                                  |                                    |                         |
|                                                              |                                                                               |        |                                                                                              | Abandon existing apparatus.                                                   |                                  |                                    |                         |
| SWW58<br>(SW Ref. SWW56)<br><br>Drg: P246600/2700<br>/SW/016 | <b>Foveran Water Mains Diversion</b><br><br>Potable main 225 mm Diameter HPPE | B      | Agree measures to safeguard existing apparatus.                                              | Design diversion                                                              | 3 Months                         | 3 Months                           | 8 Weeks                 |
|                                                              |                                                                               |        | Review diversion design.<br><br>Consult and comply with statutory undertakers' requirements. | Review diversion design.                                                      |                                  |                                    |                         |
|                                                              |                                                                               |        |                                                                                              | Procure apparatus for works.                                                  |                                  |                                    |                         |
|                                                              |                                                                               |        | Provide Traffic                                                                              | Agree Traffic                                                                 |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Scottish Water Supply (SWW)</b>                          |                          |        |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |        | Management.           | Management.                                                                   |                                  |                                    |                         |
|                                                             |                          |        |                       | Install new associated equipment.                                             |                                  |                                    |                         |
|                                                             |                          |        |                       | Inspect and supervise.                                                        |                                  |                                    |                         |
|                                                             |                          |        |                       | Undertake connection and reinstatement works.                                 |                                  |                                    |                         |
|                                                             |                          |        |                       | Test and commissioning.                                                       |                                  |                                    |                         |
|                                                             |                          |        |                       | Abandon existing apparatus.                                                   |                                  |                                    |                         |

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>[REDACTED]</b>                                           |                          |        |                       |                                                                               |                                  |                                    |                         |

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Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| [REDACTED]                                                  |                          |        |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |        |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |        |                       |                                                                               |                                  |                                    |                         |

[REDACTED]

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Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| [REDACTED]                                                  |                          |        |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |        |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |        |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |        |                       |                                                                               |                                  |                                    |                         |

[REDACTED]

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Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| [REDACTED]                                                  |                          |        |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |        |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |        |                       |                                                                               |                                  |                                    |                         |

[REDACTED]

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Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| [REDACTED]                                                  |                          |        |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |        |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |        |                       |                                                                               |                                  |                                    |                         |

[REDACTED]

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Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| [REDACTED]                                                  |                          |        |                       |                                                                               |                                  |                                    |                         |
| [REDACTED]                                                  |                          |        |                       |                                                                               |                                  |                                    |                         |



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Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| [REDACTED]                                                  |                          |        |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |        |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |        |                       |                                                                               |                                  |                                    |                         |

[REDACTED]

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Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| [REDACTED]                                                  |                          |        |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |        |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |        |                       |                                                                               |                                  |                                    |                         |

[REDACTED]

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|-----------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| [REDACTED]                                                  |                          |        |                       |                                                                               |                                  |                                    |                         |
|                                                             |                          |        |                       |                                                                               |                                  |                                    |                         |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description                                                                 | Group* | Main Works by Company                                     | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate**                |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|----------------------------------------|
| <b>Trafficmaster</b>                                        |                                                                                          |        |                                                           |                                                                               |                                  |                                    |                                        |
| TM01<br>(TM Ref SS64)<br>Drg<br>B1033200/CD/<br>2700/TM/065 | <b>Existing Charleston Overbridge</b><br><br>Relocation of existing equipment and camera | B      | Disconnect power supply and dispose of cabling and pillar |                                                                               | N/A                              | 4 weeks                            | 1 week<br><br>(For removal works only) |
|                                                             |                                                                                          |        | Provide Traffic Management                                | Agree Traffic Management                                                      |                                  |                                    |                                        |
|                                                             |                                                                                          |        |                                                           | Remove cameras and all electronics up to the electrical pillar.               |                                  |                                    |                                        |
|                                                             |                                                                                          |        |                                                           | Agree with Road Authority the relocation of apparatus                         |                                  |                                    |                                        |
|                                                             |                                                                                          |        |                                                           | Arrange all works including new power supply.                                 |                                  |                                    |                                        |

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**Appendix 1/16: Schedule of Works to Statutory Undertakers Apparatus**

| Contract Reference<br>(Undertaker Ref)<br>Drawing Reference | Location and Description | Group* | Main Works by Company                                                                                          | Works by Statutory Undertakers', Private Apparatus owners and others affected | Design and Material Order Period | Notification Period to Attend Site | Works Period Estimate** |
|-------------------------------------------------------------|--------------------------|--------|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------|------------------------------------|-------------------------|
| <b>Private Water Supplies</b>                               |                          |        |                                                                                                                |                                                                               |                                  |                                    |                         |
| Various                                                     | Various                  | B      | Maintain, protect and divert existing private water supply apparatus – see also Schedule 2, Part 2, Appendix N | None                                                                          | N/A                              | N/A                                | Company to determine    |

**Table 1/16B Notes**

\* Group classification:

- A Advance Statutory Undertakers' Works.
- B Statutory Undertakers' Works required after the Commencement Date.
- C Statutory Undertakers' Works required after the Commencement Date for which advance order of materials and wayleave negotiation may begin prior to the Commencement Date subject to agreement with the Contracting Authority.

\*\* Works Period Estimate is total of individual stages which may not be continuous.

## Appendix 1/17: Traffic Safety and Management

### 1 General Requirements

- 1.1 All traffic management shall be carried out in a manner which avoids causing traffic to divert on to alternative routes, minimises the impact on the local community and minimises delays and disruptions to existing traffic. The Company shall demonstrate to the satisfaction of those consulted that his traffic management proposals have been developed such that they include all necessary measures to minimise delays, disruptions and diversions to traffic. This shall include traffic modelling measures as appropriate using micro-simulation measures and the like. Consultation Certificates shall be submitted in accordance with the Certification Procedure.
- 1.2 Subject to the other requirements of this Agreement the Company shall comply at all times with the requirements of Chapter 8 of the Traffic Signs Manual 2009 and any relevant Transport Scotland Publication including those detailed in the DMRB.
- 1.3 The Company shall submit details of its proposed traffic management programme to the Contracting Authority at least 6 weeks before the date of the Effective Date. The programme shall identify the Temporary Traffic Management Scheme associated with each construction operation, and the duration of each phase of the programme. The scheme or schemes proposed shall take into account the information contained in this Appendix 1/17 and in Appendices 1/18, 1/19 and 1/20, and be consistent with any traffic management measures and construction operations being undertaken on adjacent roads.
- 1.4 All applications relating to Traffic Orders and/or authorisation of signs and/or signals shall be submitted to the Overseeing Organisation in writing and require the following notice:
- (i) amending or making temporary traffic orders - 12 weeks;
  - (ii) authorisation of temporary traffic signals - 7 weeks;
  - (iii) authorisation of non-prescribed signs – 5 week.
- 1.5 For advance notice of requirements for diversions, occupations and works occupations refer to Appendix 1/18.
- 1.6 The Company shall be responsible for the payment of all charges associated with the preparation and publication of all road related orders.
- 1.7 The Company shall undertake Stage 2 and Stage 3 Road Safety Audits and submit Road Safety Audit Certificates in respect of the Temporary Traffic Management Schemes in accordance with Part 1 of these New Works Requirements and the Certification Procedure.
- 1.8 Prior to any New Works starting on the New Works Site, the Company shall supply to the Contracting Authority details of traffic management proposals including, but not limited to, the following:
- (i) phasing of Works;
  - (ii) drawings showing traffic management layouts including, but not limited to, the following:
    - a) position of traffic signs, signals and cones;
    - b) width of lanes;
    - c) working areas;
    - d) safety zones;
    - e) details of temporary barriers for the protection of personnel;

**Appendix 1/17: Traffic Safety and Management**

- f) entry and exit points for site traffic;
  - g) provisions for emergency vehicles;
  - h) provisions for vehicle recovery;
  - i) provisions for wide loads; and
  - j) crossovers;
  - k) timing of Operations;
- 1.9 Sufficient information to demonstrate the objectives stated in paragraph 1 of this Appendix 1/17 can be achieved.
- 1.10 Names and telephone numbers of a minimum of 3 personnel who can be contacted by the Police and/or Contracting Authority, both during or out with the working day, and who shall be responsible for initiating whatever action shall reasonably be required in the event of an emergency. At least 2 of these contacts shall be available at any one time including periods when the New Works Site is closed.
- 1.11 The erection and removal of any traffic management installation, temporary diversion or Stage 3 Road Safety Audit shall not be carried out during the following hours and at any other time periods specified by the Contracting Authority:
- (i) Monday to Saturday – 06:00 to 09:30 hours inclusive and 16.00 (15.30 on Fridays) to 20:00 hours inclusive and on any local or national public holiday unless agreed in writing by the Relevant Authority, or on specific instructions from the Police.
- 1.12 Where the Company proposes to carry out the erection and removal of any traffic management installation, temporary diversion or Stage 3 Road Safety Audit on a Sunday, they shall give at least 7 days' notice of their proposals to the Police and shall not carry out such work without the approval of the Police.
- 1.13 Temporary crossovers on dual carriageways shall be designed for a minimum Design speed (85 percentile speed) of 70kph, or a minimum of 60kph where it can be demonstrated to the Contracting Authority that it is necessary in the interests of safety.
- 1.14 Where required by the Police, the Company shall supply, erect, maintain and remove on completion of the New Works, speed detection cameras for use by the Police at Temporary Traffic Management Schemes. The Police shall advise the Company as to the type and number of speed detection cameras required and also to the locations where the cameras should be deployed.
- 1.15 The Company shall maintain access across the New Works Site to the requirements and standards in Table 1/18 of Specification Appendix 1/18.
- 1.16 The Company shall ensure that while any Temporary Traffic Management Schemes are in force they are inspected and constantly monitored, any Defects identified being rectified immediately to the satisfaction of the Contracting Authority, the Police and the Relevant Authorities, as appropriate.
- 1.17 Frequency of inspections and maximum response times shall be as follows:

## Part 4: Specification

**Appendix 1/17: Traffic Safety and Management**

| <b>Location</b>            | <b>A90, A956, A93,<br/>A944, A96, A947,<br/>A975</b>      |                                      | <b>All other Roads</b>                                    |                                      |
|----------------------------|-----------------------------------------------------------|--------------------------------------|-----------------------------------------------------------|--------------------------------------|
|                            | <b>Frequency of<br/>inspection per 24<br/>hour period</b> | <b>Maximum<br/>Response<br/>Time</b> | <b>Frequency of<br/>inspection per 24<br/>hour period</b> | <b>Maximum<br/>Response<br/>Time</b> |
| <b>Advance<br/>Signing</b> | 4                                                         | 60 minutes                           | 2                                                         | 60 minutes                           |
| <b>Taper</b>               | 12                                                        | 15 minutes                           | 6                                                         | 15 minutes                           |
| <b>Lane Closure</b>        | 6                                                         | 30 minutes                           | 3                                                         | 30 minutes                           |
| <b>End Signing</b>         | 4                                                         | 60 minutes                           | 2                                                         | 60 minutes                           |

- 1.18 During the period when traffic restrictions are imposed on any road, the Company shall provide a minimum of two responsible and appropriately experienced operatives with an appropriate vehicle on a 24 hour day, 7 days a week basis whose sole responsibility shall be for the operational supervision of the Temporary Traffic Management Scheme.
- 1.19 The operatives shall be equipped with a mobile cellular telephone and mobile message pager to enable direct communication with them at all times. They shall be empowered to accept instructions from the Police and Roads Authority personnel with regard to the layout of the Temporary Traffic Management Scheme for which they are responsible.
- 1.20 The Company shall keep a daily record of all Defects in any Temporary Traffic Management Schemes, the times when they were identified or reported to him, the action taken to correct the defects, and the times when they were successfully corrected.
- 1.21 A copy of this record shall be forwarded to the Contracting Authority on the following day.
- 1.22 In the event of a traffic accident occurring in or adjacent to the New Works Site, the Company shall immediately contact the Police, Fire and Ambulance emergency services as appropriate and the Contracting Authority informing them of the following:
- (i) Location of the accident; and
  - (ii) The seriousness of the accident and whether any persons are trapped; whether the collision involves vehicles carrying inflammable, corrosive or hazardous substances; whether there is a possibility of ignition from leaking fuel or chemicals.
- 1.23 The Company shall attend such accidents in accordance with the requirements for recovery set out in Specification Appendix 1/20.
- 1.24 The Company shall remove any debris from the road to restore the road surface to a serviceable condition and shall then carry out any interim repairs or reinstatement that is required to reinstate the traffic control to its original layout. In any event complete reinstatement shall be made within 24 hours of the accident.
- 1.25 The Company shall ensure that sufficient personnel and a sufficient stock of spare signs and cones etc., are available at all times to make good damage to any traffic control layout.
- 1.26 When a contraflow is in operation an emergency lane shall, where practicable, be provided at all times for emergency vehicles. The emergency lane shall be kept free of materials, plant and stationary vehicles but it may be used for site access. The route shall be signed and delineated in order to ensure easy and free flow of any emergency vehicle.



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**Appendix 1/17: Traffic Safety and Management**

- 1.27 The needs and safety of non-motorised users shall be considered at all times.
- 1.28 The Company shall comply with the advice of paragraph D3.10.4-6 and O3.13 of Chapter 8 of the Traffic Signs Manual 2009.
- 1.29 All non-motorised users' diversions shall have a hard surface and adequate drainage to prevent flooding or ponding. They shall be kept clean and free from all materials, Construction Plant and stationary vehicles.
- 1.30 Excessively long lengths should be avoided where possible to avoid 'shortcuts'. Care shall be taken to avoid crossing areas regularly traversed by heavy plant.
- 1.31 No at-grade vehicle crossings of the existing A90, A96 Trunk Roads, and A944 Side Road shall be permitted.
- 1.32 All diversions of pedestrian routes which are normally lit shall be provided with a standard of lighting at least equal to that of the original route.
- 1.33 Refer to the standards given in Table 1/18B of Appendix 1/18.
- 1.34 Works required to Pedestrian Underpasses shall be undertaken in such a way that the non-motorised access provided by adjacent Underpasses is not restricted at any one time.
- 1.35 All drivers including those delivering Constructional Plant and materials shall be given clear instructions regarding the traffic arrangements applicable at any particular time.
- 1.36 Provision for the passage of abnormal loads through the New Works shall be as follows:
- (i) The Company shall assist the Police in moving abnormal loads through the Works by modifying the signing/coning as necessary; and
  - (ii) Signs/cones so moved shall be replaced immediately the abnormal loads have passed through the New Works.
- 1.37 For the purposes of this Appendix, an abnormal load shall consist of any number of vehicles in convoy at any one time, requiring special measures to be taken in order to gain passage through the New Works.
- 1.38 Meetings between the Contracting Authority, the Company, Police and the Relevant Authorities, as appropriate, shall be arranged by the Company monthly throughout the duration of the New Works, at initiation or changes of traffic management layouts and at any other time deemed necessary by any of these parties.
- 1.39 The Company shall ensure that his traffic management proposals take account of events and public holidays which are likely to affect traffic flows.
- 1.40 The Company shall accommodate roadwork schemes adjacent to the New Works and shall consult and comply with the Relevant Authority in this respect.

**2 Monitoring of Roadworks**

- 2.1 The Company shall nominate two members of staff to liaise with Traffic Scotland at all times.
- 2.2 The Company shall inform the Traffic Scotland Control Centre (TSCC), Transport Scotland, AA Roadwatch, RAC, Radio Scotland, local radio, local press, North East Management Unit, Aberdeen City Council, Aberdeenshire Council and the emergency services at least two weeks in advance of any planned major changes to the traffic management layouts, including any plans to reduce the number of lanes in accordance with paragraph 5.2.

## Appendix 1/17: Traffic Safety and Management

- 2.3 In accordance with Appendix 1/24 the Company shall within his method statements for traffic management include procedures to inform the motoring public of delays and queues on the approaches to and within the New Works Site.
- 2.4 The following organisations shall be informed of the frequencies indicated in the reporting frequencies section of paragraph 3.0 below:
- (i) Traffic Scotland Control Centre;
  - (ii) AA Roadwatch;
  - (iii) Radio Scotland;
  - (iv) Local Radio Networks;
  - (v) Traffic Link; and
  - (vi) any other organisations as specified by the Contracting Authority
- 2.5 Traffic queues shall be monitored at all times during periods when Temporary Traffic management Systems are in operation for the duration of this Agreement.
- 2.6 Traffic queues shall be measured by means of time delay.
- 2.7 Queue lengths measured as being less than eight minutes shall be defined as representing “no substantial delay”.
- 2.8 Substantial delay queue lengths shall be quoted in the following bands;
- | <b>Measured Delay</b>          | <b>Quoted Delay</b>  |
|--------------------------------|----------------------|
| Up to 8 minutes                | No substantial delay |
| Between 8 and 12 minutes       | 10 minute delay      |
| Between 13 and 17 minutes      | 15 minute delay      |
| Between 18 and 22 minutes      | 20 minute delay      |
| Subsequent 5 minute time bands | add 5 minutes        |
- 2.9 When communicating a traffic queue its length shall also be quoted as a distance in miles.
- 2.10 For the purposes of this Agreement, a queue is defined as being where the speed of vehicles is less than 20 miles per hour.

### 3 Reporting Frequencies

- 3.1 Traffic Information Outlets shall be informed if:
- (i) a queue reaches eight minutes delay;
  - (ii) a queue changes by five minute band;
  - (iii) substantial delay ends i.e. delay less than eight minutes; and
  - (iv) the Company shall report to TSCC every 30 minutes irrespective of traffic conditions.
- 3.2 The Company shall not open any area to traffic unless the following requirements are met:
- (i) appropriate road markings have been laid or removed;
  - (ii) the carriageway has been fully swept and cleared of all items of Construction Plant, personnel, materials and debris;
  - (iii) adjacent road restraint systems, where required, have been erected and tensioned;

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**Appendix 1/17: Traffic Safety and Management**

- (iv) the Company shall not have to impose future traffic restrictions on the section of carriageway to undertake New Works which could have reasonably been completed under the preceding traffic control period; and
- (v) all temporary or permanent signing and lighting is in place.

**4 Traffic Safety and Control Officer**

- 4.1 The Company shall appoint a senior member of its staff to act as Traffic Safety and Control Officer. This person shall be responsible for all traffic safety and control during the construction of the New Works and shall liaise with the Relevant Authorities as required. The Traffic Safety and Control Officer shall take instructions directly from the Contracting Authority and, in the case of emergency, from the Police where they have assumed control. Radio contact should be maintained at all times with the Traffic Safety and Control Officer.
- 4.2 The responsibilities of the Traffic Safety and Control Officer shall include the following:
  - (i) All traffic management measures associated with the New Works;
  - (ii) Ensuring that all equipment is in place and in full working order at all times;
  - (iii) Enforcement of all relevant Health and Safety directives, relating to operations and live traffic;
  - (iv) Enforcement of site access requirements;
  - (v) Liaison with the Contracting Authority and the Relevant Authorities and continued monitoring of the traffic management measures adopted; and
  - (vi) Arranging for watchmen and other staff so that the New Works Site is patrolled and inspected at all times and equipment attended to and maintained and in the case of accidents have replacement signs, cones, bollards and lights and the like erected without delay.
- 4.3 The Company shall notify the Contracting Authority and the Relevant Authorities with the name and 24 hour contact telephone number of the Traffic Safety and Control Officer appointed.

**5 Lane Occupations**

- 5.1 Notwithstanding other provisions of this Agreement, one lane for use by all permitted classes of vehicles and one narrow lane for the use of cars and other light vehicles shall be provided in each direction on the mainline carriageway of the Existing A90 Trunk Road, Existing A956, Existing A944, Existing A96 Trunk Road and the New A90 Trunk Road during the New Works, as a minimum requirement.
- 5.2 The Company shall apply to the Contracting Authority for written approval to reduce the Lane provisions described in paragraph 5.1 above to a minimum of one Lane for use by all permitted classes of vehicle in each direction on the mainline carriageway of the Existing A90 Trunk Road, Existing A956, Existing A944, Existing A96 Trunk Road and the New A90 Trunk Road.
- 5.3 The Company shall demonstrate to the Contracting Authority that such applications are necessary in terms of either buildability or health and safety.
- 5.4 Applications shall be made a minimum of 4 weeks in advance of any planned reduction to the provision of paragraph 5.1 above during the New Works.
- 5.5 In very exceptional weather circumstances, such as very heavy snow, or in other very exceptional circumstances necessary for the carrying out of the New Works and approved

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**Appendix 1/17: Traffic Safety and Management**

by the Contracting Authority, (which shall not be unreasonably withheld) a minimum of one Lane for use by all categories of vehicle in each direction shall be provided on the mainline carriageway of the Existing A90 Trunk Road, Existing A956, Existing A944, Existing A96 Trunk Road and the New A90 Trunk Road.

- 5.6 Reduction to the provision of paragraph 5.1 above shall not be permitted during the following periods, except in the case of emergencies:
- (i) Christmas and New Year holidays (24 December to 2 January inclusive);
  - (ii) Good Friday to Easter Monday inclusive;
  - (iii) between Friday and Monday inclusive on any local Bank holiday or public holiday weekend during May or September;
  - (iv) between the inclusive dates for the Offshore Europe Oil and Gas Conference and Exhibition;
  - (v) between the inclusive dates for the Scottish Golf Open each year that it is held in the Aberdeen area; and
  - (vi) as directed by the Police.
- 5.7 On Side Roads reduction to the existing provision of Lanes shall be subject to the prior written approval of the Relevant Authorities or land owners or occupiers and a temporary replacement route or temporary diversion is in operation.
- 5.8 The Company shall provide Consultation Certificates in accordance with Paragraph 1.8 to Part 4 of this Schedule 2 in respect of this requirement.
- 5.9 Lane Occupation charges shall be applied in accordance with Schedule 6.

**6 Safety of Personnel**

- 6.1 Notwithstanding any other requirements of this Agreement, safety zones at all Temporary Traffic Management Schemes on the New Works Site shall be a minimum of 1.2 metres wide unless the Company shall as part of the Temporary Traffic Management Schemes incorporate a temporary vertical concrete or steel safety barrier in lieu of other means of demarcation allowed under the other requirements of this Agreement. In such an event, the safety zone shall be a minimum of 500 millimetres wide.
- 6.2 No personnel or items of plant (other than that required for signing and coning operations) shall enter a newly closed off area until such times as the traffic has been satisfactorily diverted.
- 6.3 The Contracting Authority have the right to instruct the Company's workmen on any matter relating to the safety of personnel and traffic safety and control, including signing and coning.
- 6.4 All drivers including those delivering plant and materials shall be given clear instructions regarding the traffic management arrangements applicable at that particular time.
- 6.5 All personnel working on or adjacent to trafficked roads shall be issued with printed copies of appropriate safety instructions and receive training as necessary.

**7 Requirements for Vehicles used on the New Works**

- 7.1 Where Works are carried out on or adjacent to a road open to vehicles, all vehicles and mobile plant operating on or adjacent to that road in the construction of the Works shall be painted in a conspicuous colour as described hereafter :

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**Appendix 1/17: Traffic Safety and Management**

- (i) All vehicles used in mobile lane closures as defined in Section 6 “Type C Works” in Chapter 8 of the Traffic Signs Manual shall be painted in non-reflectorised yellow (Colour No 356 to BS 381 C or similar).
  - (ii) Similarly all vehicles engaged in New Works within unprotected trafficked lanes (for example, setting up major traffic management layouts such as tapers and contraflows) on high speed roads shall be painted non-reflectorised yellow.
  - (iii) All other vehicles undertaking New Works shall be generally light in colour preferably but not necessarily non-reflectorised yellow and/or provide, over the full width and height of the vehicle which is exposed to approaching vehicles, conspicuous markings and signs to define clearly that the vehicle is a roadworks vehicle.
  - (iv) Vehicles shall have a sign board reading “Highway Maintenance” (to Diagram 740A of Schedule 12 Part V of the Traffic Signs Regulations and General Directions 1994) fixed at the rear.
  - (v) The lettering shall be 150 millimetres “x height” except that for light vans and cars it shall be the largest “x height” that can be accommodated out of the following heights: 37.5, 50, 62.5 or 100 millimetres.
  - (vi) The lettering shall be black capital letters from the alphabet described in the Traffic Signs Regulations and General Directions 2002 Schedule 13 Part II on a yellow non-reflectorised background in accordance with BS 381C, Colour No 355.
  - (vii) All goods vehicle classes and construction vehicles shall be fitted with an audible reversing warning device.
  - (viii) All vehicles entering the New Works Site for any purpose shall comply fully with the requirements of Specification Appendix 1/19.
- 7.2 Vehicles and plant shall be provided with either roof mounted light bars or at least two amber flashing beacons, and light vans and cars shall be provided with a roof mounted amber flashing distinctive lamp.
- 7.3 All warning lamps shall be switched on when the vehicle or plant is manoeuvring into or out of the location of the New Works, operating at low speed on the carriageway or hardshoulder open to vehicles or standing on a carriageway or hard shoulder open to vehicles.
- 7.4 Hazard warning lights are not an acceptable alternative to roof mounted flashing lamps, but may be used in addition.
- 7.5 All vehicles and plant shall be free from oil and fuel leaks and if refuelled on the New Works Site care shall be taken to prevent spillage.
- 7.6 Side tipper vehicles shall be used where such shall limit turning manoeuvres alongside trafficked lanes.
- 7.7 No vehicle shall be permitted to stop on a live section of any carriageway to load or unload materials or personnel unless specifically and unavoidably for traffic management purposes.
- 7.8 During the hours of darkness no vehicle under the control of the Company shall be driven towards oncoming traffic on a closed section of the New Works Site adjacent to live traffic.

**8 Temporary Traffic Signs**

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**Appendix 1/17: Traffic Safety and Management**

- 8.1 The Company shall not take down existing local or advance direction signs or regulatory or informatory signs without first either providing temporary signs displaying the same information or replacement permanent signs.
- 8.2 All traffic signs required by the Traffic Signs Regulations and General Directions 2002 to be reflective shall be made reflective by the application of Class 1 retroreflective material.
- 8.3 All temporary traffic signs shall comply with the Traffic Signs Regulations and General Directions 2002.
- 8.4 In addition to the minimum requirements for signing and coning under Chapter 8 of the Traffic Signs Manual the Company shall erect and maintain the following:
- (i) Advanced signing two miles prior to roadworks as drawing No (P) 7004 sheet 1 of 3) detailing modification to sign WBM 338.1 of Chapter 8 of the Traffic Signs Manual.
  - (ii) The standard two-line legend "Road Repairs" shall be replaced by "Major Roadworks".
  - (iii) Signing erected one mile in advance of roadworks as drawing No (P) 7005 detailing modification to sign WBM 338 of Chapter 8 of the Traffic Signs Manual.
  - (iv) The standard two line legend shall read "Delays Possible" and a third line added to the legend indicating how long delays are possible.
  - (v) At the commencement of the roadworks, the additional line shall read, for example "until July 15".
  - (vi) At least ten working days before the end of the carriageway restrictions, the date shall be specified more precisely, for example "until 25 June 2015".
  - (vii) This date shall be further revised if necessary, until the restrictions are removed.
  - (viii) Only the following abbreviations shall be used: Jan, Feb, Mar, Apr, Aug, Sep, Oct, Nov and Dec.
  - (ix) Traffic calming chevrons shall be provided within the left hand lane prior to the Works commencing at the end of the right hand Works coning splay over a length of 10 metres. See Drawing Number 100/1 illustrating traffic calming chevrons to be provided.
  - (x) Signing to Drawing Numbers W(S) 148 and W(S) 149 shall be deposited in accordance with signs WBM 339.1 and WBM 339 respectively under Chapter 8 of the Traffic Signs Manual.
  - (xi) Where within all of the drawings listed above reference is made to "The Scottish Office", it shall be deleted and replaced with "Transport Scotland".
  - (xii) Black on yellow signs as Drawing Numbers [(P) 7004 sheet 2 of 3] and [(P) 7004 sheet 3 of 3] sited at the beginning and at 1 kilometre intervals through the Works to explain why part of the road has been coned off but no Works is, or appears to be taking place.
  - (xiii) This signing shall comprise a frame on to which signs displaying any one of the approved messages below shall be fitted.
  - (xiv) This equipment shall either be permanently sited, for the duration of the Works, where it is safe and convenient to do so, or kept on one side ready for display when it is required.

**Appendix 1/17: Traffic Safety and Management**

- (xv) The signs shall be constructed and mounted in accordance with the general principles outlined in Topic 3 of Chapter 8 of the Traffic Signs Manual.
- (xvi) They shall be reflectorised by the use of Class1 retroreflective material.
- (xvii) The legends required to the works are:
  - a) WORK SUSPENDED
  - b) UNSUITABLE WEATHER
  - c) ROAD REPAIRS
  - d) MATERIALS HARDENING
  - e) LANE CLOSED FOR SAFETY
  - f) CONCRETE SETTING
  - g) LANE CLOSED TO PROTECT WORKFORCE
  - h) FURTHER WORKS AHEAD
  - i) LANE REMAINS CLOSED FOR SAFETY PURPOSES

8.5 The minimum period of inactivity which would warrant the display of a sign is 15 minutes.

Part 4: Specification

Appendix 1/17: Traffic Safety and Management

Drwg.No.  
**(P)7004** Sheet  
1 of 3

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NOTES: 1. The legends are from the Transport Heavy alphabet at the x-heights shown.  
2. The outlines of the tiles do not form part of the sign.  
3. Colours:- BS.873:Part 6 ( Black & White- Table 5  
Other colours- Clause 4.3.3 )

Legend & Border---- Black  
Background----- Yellow      P7001 triangle { Border----- Red  
Symbol----- Black  
Background-- White

Supplate { Border & Legend- Black  
Background----- White

4. Illumination: The sign may be internally or externally lit, but if not so lit throughout ALL the hours of darkness it shall be reflectorised.  
5. x-heights are in millimetres, other dimensions in stroke widths at large x-height. ( 4sw equals the x-height )  
6. The signs shall comply with the current edition of BS.873.

Other variants

TOP LINE- Repairs to, or Renewing  
CENTRE LINE- worn out, or weak  
BOTTOM- road, bridge deck (2 lines), concrete, or surface

Fixed size for all variants

DETAILS OF ROADWORKS TRIANGLE ON DRWG NO (P)7001

supplate designed to x-ht used in it, distance may be varied.

modified WBM(R)338.1

|                                                             |
|-------------------------------------------------------------|
| FIRST ISSUED: 18.6.92                                       |
| REVISIONS:                                                  |
| THIS ISSUE: 18.6.92<br>Drawn: S.P. Approved:                |
| Title:<br>Roadworks<br>DESCRIPTION AND<br>DISTANCE TO WORKS |
| DEPARTMENT OF TRANSPORT                                     |
| Drwg.No.<br><b>(P)7004</b> Sheet<br>1 of 3                  |

Before using this drawing confirm that it has not been superseded.

P7004-1



Part 4: Specification

Appendix 1/17: Traffic Safety and Management

Drwg.No.  
**(P) 7004** sheet  
2 of 3

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**NOTES:-**

- The legends are from the Transport Heavy alphabet at the x-heights shown.
- The outlines of the tiles do not form part of the signs.
- Colours:- BS.873:Part 6 (Black & White- Table 5 Legend, Borders and Underline--- Black Background----- Yellow)
- Illumination:- Internal or external lighting or reflectorised in accordance with the Traffic Signs Regulations and General Directions.
- Dimensions :- x-heights are in millimetres, all other dimensions are in stroke widths (4sw = x-height).
- The signs shall comply with the current edition of BS.873.

FIRST ISSUED: 18.6.92

REVISIONS:

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THIS ISSUE: 18.6.92  
Drawn: R.M. Approved:

Title: Roadworks

**DESCRIPTION OF WORKS**

DEPARTMENT OF TRANSPORT

Drwg.No.  
**(P) 7004** sheet  
2 of 3

**P7004-2**

Before using this drawing, confirm that it has not been superseded.

Part 4: Specification

Appendix 1/17: Traffic Safety and Management

Drwg.No.  
**(P)7004** sheet  
3 of 3

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NOTES:-

- The legends are from the Transport Heavy alphabet at the x-heights shown.
- The outlines of the tiles do not form part of the signs.
- Colours:- BS.873:Part 6 (Black & White- Table 5 Legend & Borders- Black Background----- Yellow)
- Illumination:-  
Internal or external lighting or reflectorised in accordance with the Traffic Signs Regulations and General Directions.
- Dimensions :-  
x-heights are in millimetres, all other dimensions are in stroke widths (4sw = x-height).
- The signs shall comply with the current edition of BS.873.

|                                              |
|----------------------------------------------|
| FIRST ISSUED: 18.6.92                        |
| REVISIONS:                                   |
| THIS ISSUE: 18.6.92<br>Drawn: R.M. Approved: |
| Title: Roadworks                             |
| <b>DESCRIPTION OF WORKS</b>                  |
| DEPARTMENT OF TRANSPORT                      |
| Drwg.No.<br><b>(P)7004</b> sheet<br>3 of 3   |

P7004-3

Before using this drawing, confirm that it has not been superseded.

Part 4: Specification

Appendix 1/17: Traffic Safety and Management

Drwg.No.  
**(P) 7005**

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NOTES: 1. The legends are from the Transport Heavy alphabet at the x-heights shown. Details of Roadworks triangle on (P)7001.  
 2. The outlines of the tiles do not form part of the sign.  
 3. Colours:- BS.873:Part 6 ( Black & White- Table 5  
 Other colours- Clause 4.3.3 )

|                     |                                                 |                |                                                              |
|---------------------|-------------------------------------------------|----------------|--------------------------------------------------------------|
| Legend & Border---- | Black                                           | P7001 triangle | } Border----- Red<br>Symbol----- Black<br>Background-- White |
| Background-----     | Yellow                                          |                |                                                              |
| Supplate {          | Border & Legend- Black<br>Background----- White |                |                                                              |

4. Illumination: The sign may be internally or externally lit, but if not so lit throughout ALL the hours of darkness it shall be reflectorised.  
 5. The date may be varied to suit the circumstances.  
 6. x-heights are in millimetres, other dimensions in stroke widths at large x-height. ( 4sw equals the x-height )

Supplate designed to x-ht used in it, distance may be varied.

|        |                     |
|--------|---------------------|
| 1 mile | x-ht                |
|        | 80 min              |
|        | 200 max             |
|        | (0.8 of large x-ht) |

modified WBM(R)338

FIRST ISSUED: 18.6.92

REVISIONS:  
1. Spacing amendments 10.11.93

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THIS ISSUE: 10.11.93  
Drawn: S.P. Approved:

Title: Roadworks  
DELAY AND  
DISTANCE TO WORKS

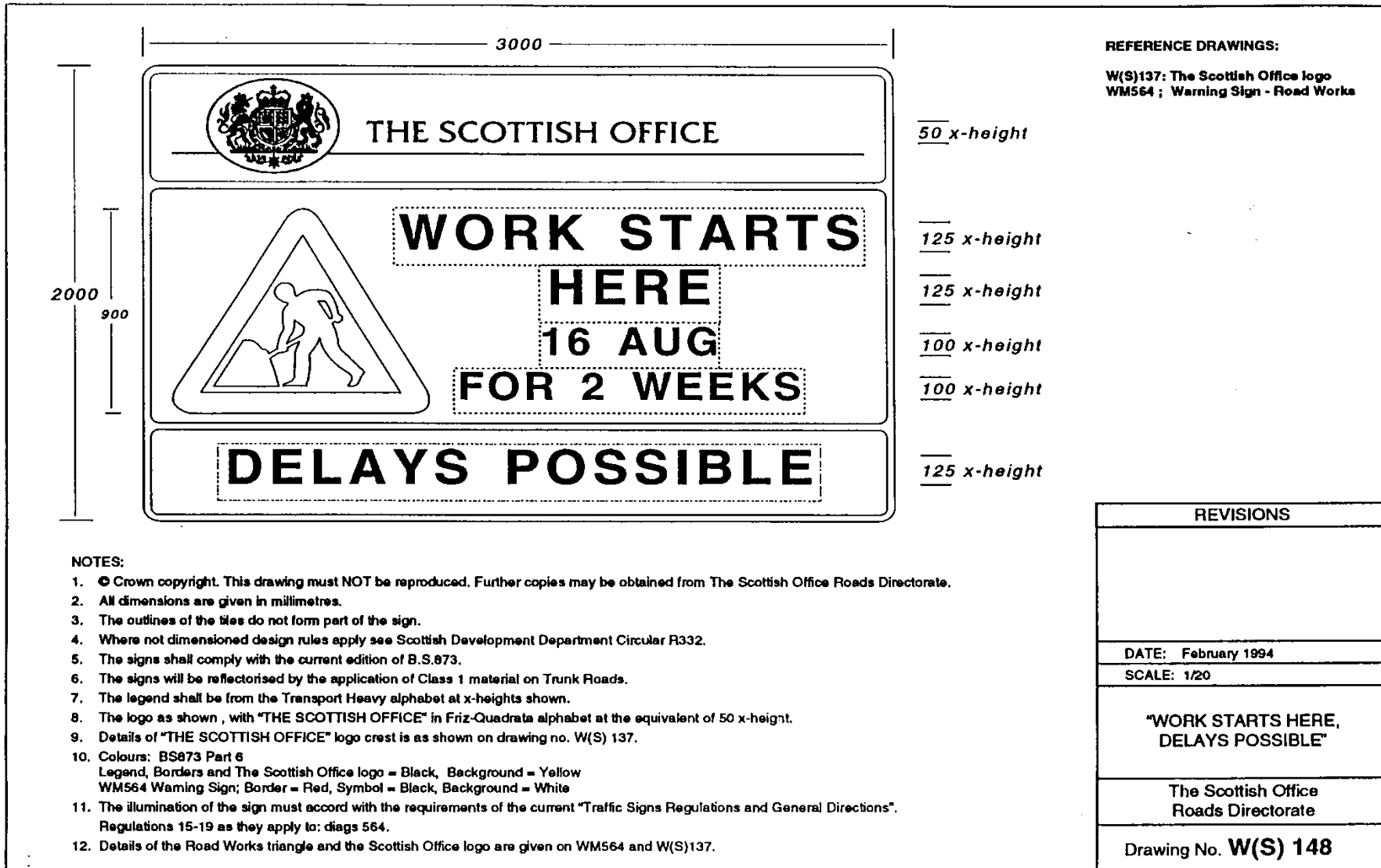
DEPARTMENT OF TRANSPORT

Drwg.No. **(P) 7005**

P7005

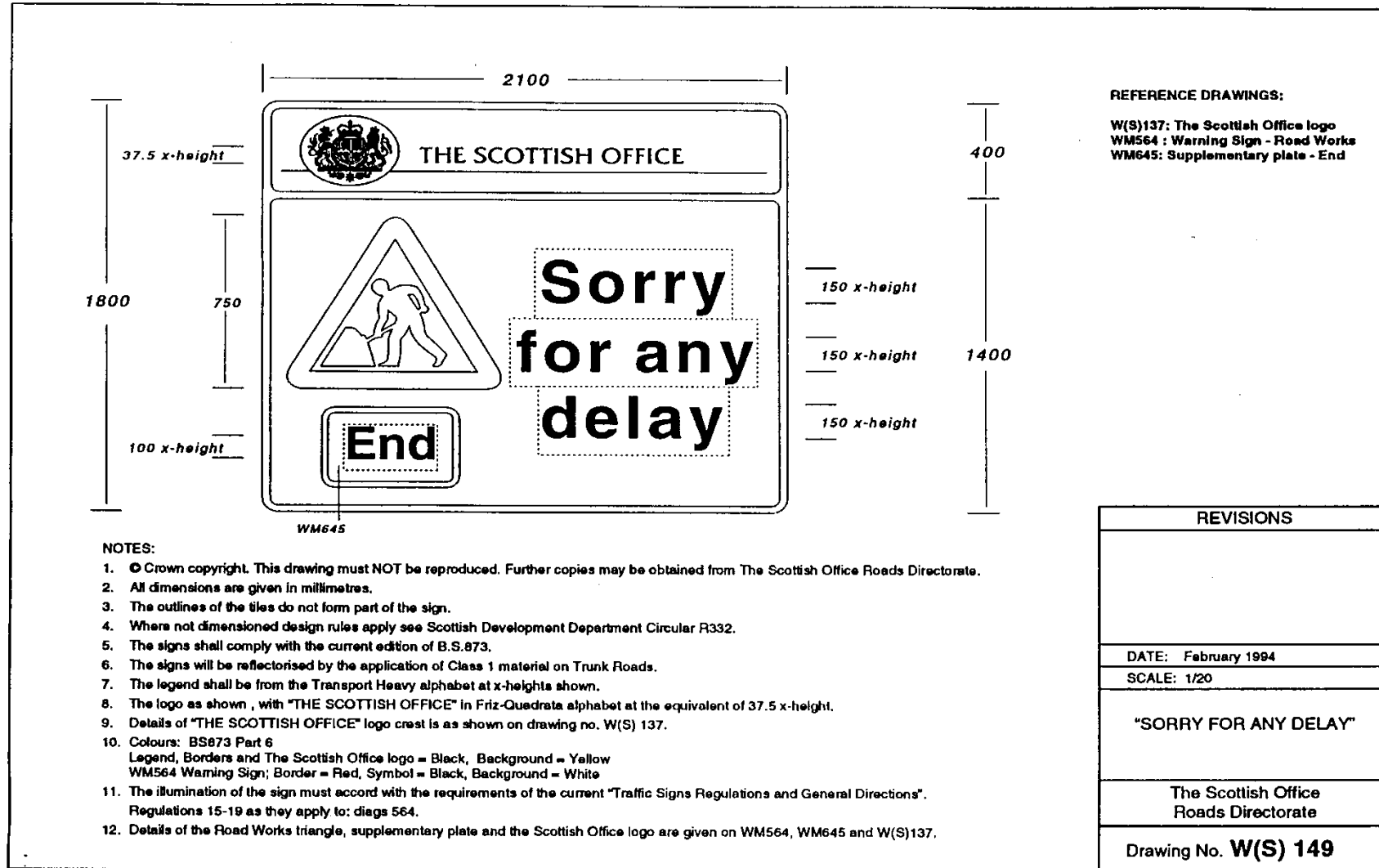
Part 4: Specification

Appendix 1/17: Traffic Safety and Management



Part 4: Specification

Appendix 1/17: Traffic Safety and Management



NOTES:

1. © Crown copyright. This drawing must NOT be reproduced. Further copies may be obtained from The Scottish Office Roads Directorate.
2. All dimensions are given in millimetres.
3. The outlines of the tiles do not form part of the sign.
4. Where not dimensioned design rules apply see Scottish Development Department Circular R332.
5. The signs shall comply with the current edition of B.S.873.
6. The signs will be reflectorised by the application of Class 1 material on Trunk Roads.
7. The legend shall be from the Transport Heavy alphabet at x-heights shown.
8. The logo as shown, with "THE SCOTTISH OFFICE" in Friz-Quadrata alphabet at the equivalent of 37.5 x-height.
9. Details of "THE SCOTTISH OFFICE" logo crest is as shown on drawing no. W(S) 137.
10. Colours: BS873 Part 6  
Legend, Borders and The Scottish Office logo = Black, Background = Yellow  
WM564 Warning Sign; Border = Red, Symbol = Black, Background = White
11. The illumination of the sign must accord with the requirements of the current "Traffic Signs Regulations and General Directions".  
Regulations 15-19 as they apply to: diags 564.
12. Details of the Road Works triangle, supplementary plate and the Scottish Office logo are given on WM564, WM645 and W(S)137.

REFERENCE DRAWINGS:  
W(S)137: The Scottish Office logo  
WM564 : Warning Sign - Road Works  
WM645: Supplementary plate - End

| REVISIONS                                |
|------------------------------------------|
|                                          |
| DATE: February 1994                      |
| SCALE: 1/20                              |
| "SORRY FOR ANY DELAY"                    |
| The Scottish Office<br>Roads Directorate |
| Drawing No. <b>W(S) 149</b>              |

GF1504

**Appendix 1/18: Design of Temporary Diversions for Traffic****1 Design Of Temporary Diversions For Traffic**

- 1.1 Safe access across the New Works shall be maintained or diversions provided in accordance with the minimum standards shown in Tables 1/18A and 1/18B to this Appendix.
- 1.2 The Company shall Design temporary diversions for traffic and the associated traffic management measures as required to suit the construction staging, methods of work and Undertakers diversions.
- 1.3 The Company shall provide and maintain access to all properties adjacent to or affected by the New Works. Temporary diversions shall be maintained at all times.
- 1.4 Where existing central reserve crossovers shall be used for temporary diversion of traffic such crossovers shall require to be upgraded in advance to current design standards detailed in the DMRB.
- 1.5 The Company shall construct temporary diversion ways wherever the New Works interfere with existing public or private roads or other ways over which there is a public or private right of way for traffic, whether vehicular or non-motorised user.
- 1.6 The Company shall submit for approval to the Contracting Authority his detailed proposals as below for the temporary diversion of traffic (including non-motorised user routes) at least 6 weeks prior to the implementation date:
- i) Phasing of the diversion works including all concurrent diversions;
  - ii) Drawings showing traffic management layout including as follows:
    - (a) position of traffic signs, signals and cones;
    - (b) width of lanes;
    - (c) working areas;
    - (d) safety zones;
    - (e) details of temporary barriers for the protection of personnel;
    - (f) entry and exit points for site traffic;
    - (g) provisions for emergency vehicles;
    - (h) provisions for vehicle recovery;
    - (i) provisions for wide loads; and
    - (j) crossovers.
  - iii) Making or amending traffic orders.
  - iv) The Company shall be responsible for the payment of all charges associated with the preparation and publication of all road related orders.
  - v) The standard of construction and lighting of diversions shall be suitable in all respects for the class or classes of traffic using the existing ways. Any temporary diversion of a road shall have a bituminous or asphaltic surface. All access provision shall be to a standard equivalent to that in place upon commencement of the New Works.
  - vi) Temporary diversions of the Trunk Roads shall be designed in accordance with the DMRB to a minimum Design speed of 70kph.

**Appendix 1/18: Design of Temporary Diversions for Traffic**

- vii) Any temporary diversions of Slip Roads and Side Roads shall be designed to a minimum Design speed of 50kph.
- viii) The Company shall give the Contracting Authority at least 14 days written notice of any phased Works which require Lane Occupations.
- ix) Table 1/18B gives minimum standards for diversions of traffic.
- x) The standards shall be used to Design temporary diversions of traffic for the road or way in question should it not be possible to maintain the required width on the existing carriageway.
- xi) Notwithstanding any other requirements of this Agreement any generator required for powering temporary traffic lights shall not be permitted within 100 metres of any occupied property.

**2 Maintenance**

- 2.1 Temporary diversions are deemed to be temporary works and are the responsibility of the Company. They shall be maintained such that the routes are available and in a suitable condition for public use at all times while the diversion is in operation.
- 2.2 The Company shall make all necessary arrangements with owners and occupiers of any land, in addition to that provided in this Agreement, which is temporarily required for the diversion of traffic.
- 2.3 No revised arrangement affecting bus stops as a consequence of the Design or the construction of the New Works shall be permitted without the prior written approval of the Relevant Authority. The Relevant Authority shall require a minimum of 12 weeks' notice to consider such approval.
- 2.4 Temporary diversion signing shall be maintained in good order and covered or removed when the diversion is not in operation.

Part 4: Specification

**Appendix 1/18: Design of Temporary Diversions for Traffic**

**Table 1/18A: Requirements of the Contracting Authority in the Execution of Temporary Diversions Necessitated by the New Works.**

| Description                                                                                                                           | Requirements                                                                                                                                                                                                         | Remarks                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Existing A90 Trunk Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                                      | To be kept open at all times. One lane for use by all permitted classes of vehicles shall be maintained in each direction as a minimum unless approval is granted in accordance with Paragraph 5.2 of Appendix 1/17. | Refer to Appendix 1/17                                                            |
| Existing A90 Trunk Road from Blackdog Junction to Eigie Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project. | Two lanes southbound for use by all permitted classes of vehicles shall be maintained between 0600 and 0930 on weekdays                                                                                              |                                                                                   |
| Existing A956 Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                                           | To be kept open at all times. One lane for use by all permitted classes of vehicles shall be maintained in each direction as a minimum unless approval is granted in accordance with Paragraph 5.2 of Appendix 1/17. | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| Existing A944 Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                                           | To be kept open at all times. One lane for use by all permitted classes of vehicles shall be maintained in each direction as a minimum unless approval is granted in accordance with Paragraph 5.2 of Appendix 1/17. | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| Existing A93 Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                                            | To be kept open at all times. One lane for use by all permitted classes of vehicles shall be maintained in each direction as a minimum unless approval is granted in accordance with Paragraph 5.2 of Appendix 1/17. | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| Existing A96 Trunk Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                                      | To be kept open at all times. One lane for use by all permitted classes of vehicles shall be maintained in each direction as a minimum unless approval is granted in accordance with Paragraph 5.2 of Appendix 1/17. | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |



## Part 4: Specification

**Appendix 1/18: Design of Temporary Diversions for Traffic**

| <b>Description</b>                                                                                           | <b>Requirements</b>                                                                                                                                                                                                                                                                       | <b>Remarks</b>                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| All Existing Slip Roads except Charleston Northbound Merge Slip                                              | One lane for use by all permitted classes of vehicles shall be maintained at all times unless otherwise agreed in writing with the Contracting Authority.                                                                                                                                 | Except where Slip Roads shall be closed permanently in which case temporary or new provision shall be in place prior to closure of existing provision. |
| Existing Charleston Northbound Merge Slip                                                                    | May be permanently closed in advance of the new Charleston Northbound Merge Slip coming into operation.                                                                                                                                                                                   | None.                                                                                                                                                  |
| B979 Netherley Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                 | May be closed between the hours 2100 and 0600 on Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority.                                                                                                                          | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times.                                                                      |
| U89K Auquorthies to Ury Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.        | Shall not be permanently restricted to vehicles until the U88K to U89K Link Road has been brought into operation.<br><br>May be closed between the hours 2100 and 0600 on Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority. | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times.                                                                      |
| U88K Fishermyre to Clayfolds Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.   | May be closed between the hours 2100 and 0600 on Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority.                                                                                                                          | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times.                                                                      |
| U167K Cantlayhills to Wellhead Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project. | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority.                                                                                                             | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times.                                                                      |

## Part 4: Specification

**Appendix 1/18: Design of Temporary Diversions for Traffic**

| <b>Description</b>                                                                                                 | <b>Requirements</b>                                                                                                                                                           | <b>Remarks</b>                                                                    |
|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| C12K Bridge of Muchalls to Netherley Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project. | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority. | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| C25K Muchalls to Burnhead Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.            | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority. | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| C24K Skateraw to Cookney Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.             | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority. | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| C13K Lairhillock to Portlethen Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.       | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority. | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| C5K Lochton to Auchlunies to Nigg Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.    | May be closed between the hours 2300 and 0600 on Weekdays if approval is granted in writing from Aberdeenshire Council and the Contracting Authority.                         | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| B977 Echt to Balmedie Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                | May be closed between the hours 2100 and 0600 on Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority.              | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |

## Part 4: Specification

**Appendix 1/18: Design of Temporary Diversions for Traffic**

| <b>Description</b>                                                                                                    | <b>Requirements</b>                                                                                                                                                                                                                                                                                                                          | <b>Remarks</b>                                                                    |
|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| C25C Newmacher Church Road Link Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.         | <p>Shall not be permanently restricted to vehicles until the B977 Echt to Balmedie Road (5) and the Newmacher Church Link Road have been brought into operation.</p> <p>May be closed between the hours 2100 and 0600 on Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority.</p> | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| U19C Leuchlands to Cranbog to Shielhill Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project. | <p>May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority.</p>                                                                                                                                                         | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| C1C Belhelvie to Waterridgemuir Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.         | <p>Shall not be permanently restricted to vehicles until a suitable temporary or permanent replacement has been brought into operation.</p> <p>May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority.</p>             | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| Hareburn Terrace within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                             | <p>Shall not be permanently restricted to vehicles until a suitable temporary or permanent replacement has been brought into operation.</p> <p>May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority.</p>             | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| Access off A90 to Blackdog Industrial Estate within the LMA and/or Traffic Management linked to the AWPR/B-T Project. | <p>Shall not be permanently restricted to vehicles until a suitable temporary or permanent replacement has been brought into operation.</p>                                                                                                                                                                                                  | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |

## Part 4: Specification

## Appendix 1/18: Design of Temporary Diversions for Traffic

| Description                                                                                                                | Requirements                                                                                                                                                                                                                                                                               | Remarks                                                                           |
|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| A947Aberdeen to Oldmeldrum to Turriff Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.        | May be closed between the hours 2100 and 0600 on Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority.                                                                                                                           | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| U63K Maryculter Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                              | May be closed between the hours 2300 and 0600 on Weekdays if approval is granted in writing from Aberdeenshire Council and the Contracting Authority.                                                                                                                                      | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| B9077 South Deeside Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                          | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority.                                                                                                              | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| C5K Lochton to Auchlunies to Nigg Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.            | May be closed between the hours 2300 and 0600 on Weekdays if approval is granted in writing from Aberdeenshire Council and the Contracting Authority.                                                                                                                                      | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| C30K Hillside to Batchart Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                    | May be closed between the hours 2100 and 0600 on Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority.                                                                                                                           | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| C34K Hilldowntree to Sunnyside to Causeyport Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project. | <p>Shall not be permanently restricted to vehicles until the C34K Access Road has been brought into operation.</p> <p>May be closed between the hours 2100 and 0600 on Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority.</p> | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |

## Part 4: Specification

**Appendix 1/18: Design of Temporary Diversions for Traffic**

| <b>Description</b>                                                                                         | <b>Requirements</b>                                                                                                                                                                                                                                                                                                                                                                           | <b>Remarks</b>                                                                    |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Milltimber Brae Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.              | <p>May be closed between the hours 2100 and 0600 on Saturday and Sunday only once the access between Station Road and the A93 has been re-opened and in any case if approval is granted in writing from Aberdeen City Council and the Contracting Authority.</p> <p>The access between Station Road and the A93 shall be re-closed upon completion of the new Milltimber Brae Overbridge.</p> | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| Culter House Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                 | <p>Shall not be severed by the new works until the B979 Milltimber Brae Road (2) replacement has been brought into operation.</p> <p>May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeen City Council and the Contracting Authority.</p>                                                                        | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| Kippie Lodge Access Track within the LMA and/or Traffic Management linked to the AWPR/B-T Project.         | Shall not be severed by the new works until the B979 Milltimber Brae Road (2) replacement has been brought into operation.                                                                                                                                                                                                                                                                    | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| Contlaw Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                      | May be closed between the hours 2100 and 0600 on Saturday and Sunday if approval is granted in writing from Aberdeen City Council and the Contracting Authority.                                                                                                                                                                                                                              | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| C127C Wester Ord to Blacktop Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project. | May be closed between the hours 2100 and 0600 on Saturday and Sunday if approval is granted in writing from Aberdeen City Council and the Contracting Authority.                                                                                                                                                                                                                              | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| Kingsford to Gairnlea Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.        | Shall not be severed by the new works until the Kingsford to Gairnlea Road, Moss of Auchlea Road, Gairn Farm Access Track (East) and Gairn Farm Access Track (West) have been brought into operation.                                                                                                                                                                                         | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |

## Part 4: Specification

## Appendix 1/18: Design of Temporary Diversions for Traffic

| Description                                                                                                                      | Requirements                                                                                                                                                                                                                                                                                                                          | Remarks                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| A944 Aberdeen to Alford to Strathdon Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.               | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeen City Council and the Contracting Authority.                                                                                                                                                         | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| C93C Clintery to Kingsford Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                         | <p>Shall not be severed by the new works until the C93C Clintery to Kingsford Road has been brought into operation.</p> <p>May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeen City Council and the Contracting Authority.</p>                          | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| C89C Chapel of Stoneywood to Fairley Road (1) and (2) within the LMA and/or Traffic Management linked to the AWPR/B-T Project.   | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeen City Council and the Contracting Authority.                                                                                                                                                         | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| C89C Chapel of Stoneywood to Fairley Road at Craibstone within the LMA and/or Traffic Management linked to the AWPR/B-T Project. | <p>Shall not be severed by the new mainline works to the north of the A96 until the AWPR/B-T Phase 1 Works have been brought into operation.</p> <p>May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeen City Council and the Contracting Authority.</p> | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| U90C Tulloch Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                                       | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeen City Council and the Contracting Authority.                                                                                                                                                         | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |

## Part 4: Specification

## Appendix 1/18: Design of Temporary Diversions for Traffic

| Description                                                                                                           | Requirements                                                                                                                                                                                                                                                                                                                   | Remarks                                                                           |
|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Pitmedden Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                               | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeen City Council and the Contracting Authority.                                                                                                                                                  | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| B999 Aberdeen to Tarves Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                 | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeen City Council and the Contracting Authority.                                                                                                                                                  | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| U19C Leuchlands to Cranbog to Shielhill Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project. | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeen City Council and the Contracting Authority.                                                                                                                                                  | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| A956 Wellington Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                         | Shall not be restricted in any way if the A90 between Charleston and Bridge of Dee or the Great Southern Road have any restrictions and/or road works in progress.<br><br>May be closed between the hours 2100 and 0600 on Sundays if approval is granted in writing from Aberdeen City Council and the Contracting Authority. | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| U168K Old Stonehaven Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                    | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeen City Council and the Contracting Authority.                                                                                                                                                  | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |
| Dyce Drive Road within the LMA and/or Traffic Management linked to the AWPR/B-T Project.                              | May be closed between the hours 2100 and 0600 on Saturday and Sunday if approval is granted in writing from Aberdeen City Council and the Contracting Authority.                                                                                                                                                               | Refer to Appendix 1/17. Non-motorised user access shall be provided at all times. |



## Part 4: Specification

**Appendix 1/18: Design of Temporary Diversions for Traffic**

| <b>Description</b>                                                                            | <b>Requirements</b>                                                                                                                                                           | <b>Remarks</b>                                                                    |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Eigie Road, within the LMA and/or Traffic Management linked to the AWPR/B-T Project.          | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority. | Refer to Appendix 1/17. Non motorised user access shall be provided at all times. |
| Old Road, Balmedie within the LMA and/or Traffic Management linked to the AWPR/B-T Project.   | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority. | Refer to Appendix 1/17. Non motorised user access shall be provided at all times. |
| B977 Belhelvie Road, within the LMA and/or Traffic Management linked to the AWPR/B-T Project. | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority. | Refer to Appendix 1/17. Non motorised user access shall be provided at all times. |
| South Orrock Road, within the LMA and/or Traffic Management linked to the AWPR/B-T Project.   | Cannot be closed until an alternative access is provided and approved by the Contracting Authority.                                                                           |                                                                                   |
| Orrock Road, within the LMA and/or Traffic Management linked to the AWPR/B-T Project.         | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority. | Refer to Appendix 1/17. Non motorised user access shall be provided at all times  |
| Westfield Road, within the LMA and/or Traffic Management linked to the AWPR/B-T Project.      | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority. | Refer to Appendix 1/17. Non motorised user access shall be provided at all times  |
| Kirkhill Road, within the LMA and/or Traffic Management linked to the AWPR/B-T Project.       | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority. | Refer to Appendix 1/17. Non motorised user access shall be provided at all times  |



## Part 4: Specification

**Appendix 1/18: Design of Temporary Diversions for Traffic**

| Description                                                                                      | Requirements                                                                                                                                                                  | Remarks                                                                           |
|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| A975 Newburgh Road; within the LMA and/or Traffic Management linked to the AWPR/B-T Project.     | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority. | Refer to Appendix 1/17. Non motorised user access shall be provided at all times  |
| Mill Road, within the LMA and/or Traffic Management linked to the AWPR/B-T Project.              | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority. | Refer to Appendix 1/17. Non motorised user access shall be provided at all times  |
| Pitmillan Road, within the LMA and/or Traffic Management linked to the AWPR/B-T Project.         | Cannot be closed until an alternative access is provided and approved by the Contracting Authority.                                                                           |                                                                                   |
| B9000 East, within the LMA and/or Traffic Management linked to the AWPR/B-T Project.             | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority. | Refer to Appendix 1/17. Non motorised user access shall be provided at all times. |
| B9000 West, within the LMA and/or Traffic Management linked to the AWPR/B-T Project.             | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority. | Refer to Appendix 1/17. Non motorised user access shall be provided at all times. |
| Millden Access Road, within the LMA and/or Traffic Management linked to the AWPR/B-T Project.    | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from Aberdeenshire Council and the Contracting Authority. | Refer to Appendix 1/17. Non motorised user access shall be provided at all times. |
| Stoneyards Access Road, within the LMA and/or Traffic Management linked to the AWPR/B-T Project. | May be closed between the hours 2100 and 0600 on Weekdays and Saturday and Sunday if approval is granted in writing from the Contracting Authority.                           | Refer to Appendix 1/17. Non motorised user access shall be provided at all times. |

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**Appendix 1/18: Design of Temporary Diversions for Traffic**

| <b>Description</b>                                                                                          | <b>Requirements</b>                                                                                           | <b>Remarks</b> |
|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------|
| Balmedie south and north junction, within the LMA and/or Traffic Management linked to the AWPR/B-T Project. | Either junction cannot be closed until an alternative route is provided and approved by Aberdeenshire Council |                |

## Part 4: Specification

## Appendix 1/18: Design of Temporary Diversions for Traffic

Table 1/18B: Schedule of Standards for Temporary Diversions of Traffic

| Route                                             | Parameter                                          | Minimum Standard                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Existing A90 Trunk Road, Existing A96 Trunk Road. | General                                            | Subject to the requirements of Chapter 8 of the Traffic Signs Manual.<br>No diversion out with the limits of the Trunk Roads shall be permitted.                                                                                                                                                                                                                                                           |
|                                                   | Temporary running surface on carriageway widening  | The standard of construction of diversions shall be suitable in all respects for the class or classes of traffic using the existing carriageways. Any temporary diversion of a road shall have a bituminous or asphaltic surface. All temporary diversions shall be maintained at all times. Gradients shall not be greater than 6 per cent (except where otherwise agreed by the Overseeing Organisation) |
|                                                   | Central reserve crossing for contraflow operations | The standard of construction of diversions shall be suitable in all respects for the class or classes of traffic using the existing carriageways. Any temporary diversion of a road shall have a bituminous or asphaltic surface. All temporary diversions shall be maintained at all times. Length of crossing shall not be less than 40 metres, with a maximum crossfall of 7 per cent.                  |
| Side Roads                                        | Construction                                       | The standard of construction of diversions shall be suitable in all respects for the class or classes of traffic using the existing carriageways. Any temporary diversion of a road shall have a bituminous or asphaltic surface. All temporary diversions shall be maintained at all times, with a maximum gradient compatible with the existing side road.                                               |

**Appendix 1/19: Routeing of Vehicles****1 General**

- 1.1 The Company shall submit to the Contracting Authority his proposals for New Works Site access points including access to offices etc. at least four weeks in advance of the proposed start date for construction.
- 1.2 Access to the New Works Site for the Company's vehicles of over 3 tonnes unladen weight shall be taken at the following points only:
- (i) Existing A90 Trunk Road;
  - (ii) Existing A956 Road;
  - (iii) Existing A93 Road;
  - (iv) Existing A944 Road;
  - (v) Existing A96 Trunk Road;
  - (vi) Existing A975;
  - (vii) Existing A947;
  - (viii) Existing B9077;
  - (ix) Existing B977 in respect of Phase 2 New Works; and
  - (x) Existing B9000.
- 1.3 The Company shall consult and comply with the requirements of;
- Aberdeen City Council;
  - Aberdeenshire Council;
  - Transport Scotland; and
  - Landowners.
- as appropriate in connection with securing agreement to use any other existing public and private roads including footways, farm and house accesses. The Company shall provide consultation certificates in accordance with the Certification Procedure in respect of this requirement.
- 1.4 The Company shall provide, maintain and keep available at all times equipment as may be necessary to keep such ways clean.
- 1.5 The Company shall appraise itself of the standards of such routes with regard to height, weight or other restrictions by which its Operations may be limited or affected.
- 1.6 Any strengthening work required shall be carried out by the Company to the approval of the Overseeing Organisation, Aberdeen City Council, and Aberdeenshire Council, as appropriate.
- 1.7 All other possible access points to the New Works from existing roads shall be signed with the 'NO ACCESS TO CONSTRUCTION TRAFFIC' sign (layout to be approved by the Contracting Authority).
- 1.8 The access and egress points shall be kept clear at all times and shall be constructed to a suitable standard to achieve a suitable gradient and running surface to permit a smooth access and egress of vehicles in a forward direction.

## Part 4: Specification

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**Appendix 1/19: Routeing of Vehicles**

- 1.9 All accesses shall comprise a minimum paved width of 6.5 metres for a distance of 20 metres from the public road.
- 1.10 All accesses shall incorporate a suitable wheel wash on the exit side.
- 1.11 All roads and accesses within the New Works Site, including existing public and private roads, footpaths, bridleways, farm field and house accesses used by any vehicles engaged on the New Works or any new roads which are part of the New Works and which are being used by traffic shall be kept clean and clear of all dirt, mud or other materials dropped by the said vehicles.
- 1.12 The Company shall provide, maintain and keep available equipment, such as a vehicle incorporating a suction device and a road brush, as may be necessary to keep the roads clean.
- 1.13 All egresses shall incorporate a suitable wheel wash on the exit side.
- 1.14 Bulk Haulage of material excavated within the New Works Site shall be carried out on haul roads within the New Works Site wherever possible.
- 1.15 The use of public roads for this operation shall only be permitted subject to consultation with the Overseeing Organisation, Aberdeen City Council, or Aberdeenshire Council, as appropriate, notwithstanding at grade crossings of public roads, which may be permitted subject to the Company submitting satisfactory traffic management proposals to the Contracting Authority
- 1.16 Sufficient information, including details of the frequency of plant crossing, loads and working period of crossings shall be supplied to the Contracting Authority to enable the Contracting Authority to consider the proposal.
- 1.17 If the proposed method of construction involves the use of any part of the permanent New Works by construction traffic, the Company shall take any necessary measures to protect such permanent New Works.
- 1.18 The Company shall submit to the Contracting Authority details of proposed borrow pits and tipping areas, which are off the New Works Site and the intended routing of vehicles to and from such sites.
- 1.19 The Company should also inform the Contracting Authority of the type of such vehicles to be used for transport, which should be compatible with the standard of the above routes.
- 1.20 The Company shall provide, erect and maintain such traffic signs, lamps and barriers etc. complying with Clause 117 of the Specification as may be required to ensure the observance of requirements and restrictions detailed in this Appendix.
- 1.21 At-grade right turns or U-turns to and from or on the New or Existing Trunk Roads shall be prohibited at all times.
- 1.22 Right turn manoeuvres shall only be permitted at grade separated junctions.
- 1.23 Persistent infringement of the foregoing restrictions shall be deemed a Company Default in terms of this Agreement.
- 1.24 If the Company wishes to make use of existing laybys as access points to the New Works Site, approval shall be obtained from the Relevant Authorities and, where required, an alternative layby provided for the duration of the New Works, to accommodate bus services, breakdown situations and Police traffic monitoring operations.
- 1.25 Any work which necessitates machinery and plant crossing public roads shall only be permitted with the prior written approval of the Relevant Authority.

**Appendix 1/19: Routeing of Vehicles**

- 1.26 Notwithstanding such approval being granted all such work shall be in compliance with the requirements of Chapter 8 of the Traffic Signs Manual and Traffic Signs Regulations and General Directions 2002.

**2 Movement of Machinery and Plant across Public Roads**

- 2.1 The Company shall not move excavated material across public roads unless written authorisation has been obtained from the Relevant Authorities.
- 2.2 Any plant crossing shall be traffic signal controlled and shall meet the requirements of Section 4.5 of Chapter 8 of the Traffic Signs Manual.
- 2.3 The Company shall keep the crossing area in a safe condition and as good a condition at all times as the road surface on either side of it. The Company shall take such action as is necessary to protect and maintain the surface of the public road crossed by Constructional Plant.

**3 Temporary Structures for the Diversion of Public Roads or for Construction Traffic Spanning Areas used by the Public**

- 3.1 For any temporary structures which may be required for temporary diversions of public roads or for spanning areas used by the public, the following criteria shall apply:
- (i) The Company shall follow the technical approval procedures contained in BD2 of the DMRB for the design of all temporary structures required to carry public roads or to span areas used by the public.
  - (ii) The Company shall provide copies of the Design and Design Check Certificates in accordance with the Certification Procedure.
  - (iii) For temporary Structures spanning the New and Existing Trunk Roads, the headroom shall be not less than 5.7 metres, excepting where the road below is designated a 'High Load Route' , where the minimum headroom shall be 6.45 metres
  - (iv) Notwithstanding the provisions of BD 2, all temporary structures for the diversion of public roads or spanning areas used by the public shall be designated as Category 3 structures.
  - (v) Designs shall be undertaken in accordance with the DMRB and Transport Scotland's Interim Amendments.

## Part 4: Specification

**Appendix 1/20: Recovery of Vehicles****1 Recovery Vehicles to be Provided****1.1 Heavy Recovery Vehicles**

1.1.1 A minimum of one number heavy recovery vehicle shall be provided on the New Works Site at all times available for roadworks to the New and Existing Trunk Roads.

1.1.2 The heavy recovery vehicle shall comply with the following:

- (i) Be a 3 axle vehicle capable of suspend towing a fully laden 44 tonne vehicle up a slope of 4 per cent and shall comply with all appropriate current legislation including Road Vehicles (Construction and Use) Regulations, Road Transport Act and Road Traffic Act. The vehicle shall be fitted with either a 10 tonne single power winch or two power winches of not less than 8 tonnes each. All equipment shall be power-operated with safe working load ("SWL") indicated and with operating levers/buttons clearly marked for operational use.
- (ii) Be equipped with chains, wire ropes and shackles suitable for the recovery a fully-laden 44 tonnes gross vehicle weight ("GVW") vehicle. All chains, wire ropes and shackles shall have test certificates and/or stamped showing the SWL, be free from snags, excess stretch and wear.
- (iii) Have seating for not less than two adult passengers (in addition to the recovery operatives).
- (iv) Be conspicuous, for example, by marking with suitable tape (not less than 125 mm wide) to sides and rear of the vehicle.
- (v) The heavy recovery vehicle shall be fitted with the following as a minimum requirement:

| Quantity | Item                                                                                                          |
|----------|---------------------------------------------------------------------------------------------------------------|
| 1        | Amber lightbar to comply with The Road Vehicles Lighting Regulations 1989                                     |
| 2        | Fully adjustable lights to illuminate both sides and rear of the vehicle                                      |
| 2        | Fire extinguishers (1 Number 6 kilograms (net) dry powder; 1 Number 9 litre (net) aqueous film forming foam   |
| 1        | 1-10 person first aid kit to include disposable surgical gloves                                               |
| 2        | 10 metres 12 tonne nylon straps                                                                               |
| 2        | 30 metres by 13 millimetres polypropylene rope                                                                |
| 1        | 44 tonne straight tow pole                                                                                    |
| 1        | 44 tonne cranked tow pole                                                                                     |
| 10       | Highway cones 750 millimetres high                                                                            |
| 1        | Proof load tested crane. (Overlift proof test – static 7.5 tonnes, underlift proof test –static 7.0 tonnes.); |
| 1        | Suitable socket set including AF/Metric and BA sizes                                                          |
| 1        | Suitable tool kit                                                                                             |
| 2        | 12 tonne bottle jacks                                                                                         |
| 1        | Suitable wheelbrace to fit Heavy Goods Vehicles in common use and a torque                                    |

## Part 4: Specification

## Appendix 1/20: Recovery of Vehicles

| Quantity | Item                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | wrench                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1        | Suitable jump leads (24 volt)                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1        | Explosion and flame proof hand lamp                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1        | Crowbar                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1        | Copper hammer                                                                                                                                                                                                                                                                                                                                                                                                                             |
|          | The necessary fittings for connection, from air braking system of a broken down or accident damaged vehicle, to the air braking system of the heavy recovery vehicle                                                                                                                                                                                                                                                                      |
| 2        | Wheel chocks of Heavy Goods Vehicle size                                                                                                                                                                                                                                                                                                                                                                                                  |
| 4        | Suitable lengths of wood block skidding                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1        | Rear lighting board incorporating 'ON TOW' legend in lettering of not less than 70 millimetres on conspicuously coloured background to conform with the size, colour and type illustrated by Diagram 5, Section B, Schedule 19 of the Roads Vehicles Lighting Regulations, 1989. The board shall be fitted with lights, reflectors and indicators. When required the recovery vehicle index number or trade license plate shall be fitted |
| 1        | Sledge hammer – 7lbs minimum                                                                                                                                                                                                                                                                                                                                                                                                              |
|          | ADR (HAZCHEM) chart                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 50kg     | Dry fine sand stored in a waterproof container                                                                                                                                                                                                                                                                                                                                                                                            |

(vi) The heavy recovery vehicle shall also carry as a minimum requirement;

| Quantity | Item                                          |
|----------|-----------------------------------------------|
| 4        | (a) 'D' shackles SWL 12 tonnes each           |
| 4        | (b) 'D' shackles SWL 3 tonnes each            |
| 2        | (c) Suitable length chains SWL 12 tonnes each |
| 2        | (d) Suitable length chains SWL 5 tonnes each  |
| 2        | (e) Suitable length chains SWL 3 tonnes each  |

NOTE: All lifting chains and equipment shall be fully certified by an independent competent person to comply with all current legislation. Shackles listed in (vi) (a) and (b) should be stamped with the appropriate SWL. Equivalent wire ropes may be substituted for chains listed in (vi) (c), (d) and (e).

- (vii) The heavy recovery vehicle shall carry, and use when necessary, equipment designed and manufactured for the purpose of locking the steering of the broken-down or accident damaged vehicle in order to tow in a reverse direction.
- (viii) The heavy recovery vehicle shall carry equipment to enable the recovery crew to remove the drive line or shafts of the broken down or accident damaged vehicle.
- (ix) The heavy recovery vehicle shall carry blocks with a SWL of 8 tonnes, 1 number per winch and 2 number on boom (crane) wires.



## Part 4: Specification

**Appendix 1/20: Recovery of Vehicles**

## 1.2 Light Recovery Vehicle

1.2.1 A minimum of two number light recovery vehicles shall be provided on the New Works Site at all times available for roadworks to New and Existing Trunk Roads and Motorways.

1.2.2 The light recovery vehicle shall comply with the following:

- (i) be capable of carrying or towing, by means of an underlift, a vehicle weighing 2800kg up a slope of 4° and shall comply with all appropriate current legislation including Road Vehicles (Construction and Use) Regulations, Road Transport Act and Road Traffic Act.
- (ii) Be capable of recovering motor cycles.
- (iii) Be capable of recovering trailers (i.e. caravans, boat trailers, horse boxes, etc.)
- (iv) Have seating capacity for four adult passengers (in addition to the recovery operatives).
- (v) Be conspicuous, for example, by marking with suitable tape (not less than 125 mm wide) to sides and rear of the vehicle.
- (vi) The light recovery vehicle shall be fitted with the following as a minimum requirement:

| Quantity | Item                                                                                                        |
|----------|-------------------------------------------------------------------------------------------------------------|
| 1        | Amber lightbar to comply with The Road Vehicles Lighting Regulations 1989                                   |
| 2        | Fully adjustable lights to illuminate both sides and rear of the vehicle                                    |
| 2        | Fire extinguishers (1 Number 6 kilograms (net) dry powder; 1 Number 9 litre (net) aqueous film forming foam |
| 1        | 1-10 person first aid kit to include disposable surgical gloves                                             |
| 1        | 30 metres by 13 millimetres polypropylene rope                                                              |
| 1        | 6 tonne straight tow pole                                                                                   |
| 10       | Highway cones 750 millimetres high                                                                          |
| 1        | Proof load tested winch and/or spectacle lift                                                               |
| 1        | Suitable socket set including AF/Metric and BA sizes                                                        |
| 1        | Suitable tool kit                                                                                           |
| 1        | 3 tonne bottle or trolley jack                                                                              |
| 1        | Suitable wheelbrace to fit cars and Light Goods Vehicles in common use                                      |
| 1        | Suitable jump leads (24 volt)                                                                               |
| 1        | Explosion and flameproof hand lamp                                                                          |
| 1        | Crowbar                                                                                                     |
| 1        | Quick change towing hitch suitable for 50 millimetres, 2 inch or jaw type fittings                          |
| 1        | Broom and shovel                                                                                            |
| 1        | Wheel chocks of Light Commercial size                                                                       |
| 2        | Suitable lengths of wood block skidding                                                                     |

## Part 4: Specification

**Appendix 1/20: Recovery of Vehicles**

| Quantity | Item                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1        | Rear lighting board incorporating 'ON TOW' legend in lettering of not less than 70 millimetres on conspicuously coloured background to conform with the size, colour and type illustrated by Diagram 5, Section B, Schedule 19 of the Roads Vehicles Lighting Regulations, 1989. The board shall be fitted with lights, reflectors and indicators. When required the recovery vehicle index number or trade licence plate shall be fitted |
|          | Total lift facility – 2800kg slideback deck (7.6 metres minimum) or heavy duty dollies                                                                                                                                                                                                                                                                                                                                                    |
| 50kg     | Dry fine sand stored in a waterproof container                                                                                                                                                                                                                                                                                                                                                                                            |

(vii) The light recovery vehicle shall also carry as a minimum requirement:

| Quantity | Item                                                           |
|----------|----------------------------------------------------------------|
| 4        | (a) 'D' shackles SWL 3 tonnes each                             |
| 2        | (b) suitable length wire ropes SWL 3 tonnes each               |
| 2        | (c) ratchet jackets SWL 6 tonnes each, or hydraulic equivalent |
| 2        | (d) suitable towing trolley                                    |

NOTE: All lifting chains and equipment shall be fully certified by an independent competent person to comply with all current legislation. An equivalent chain may be substituted for the wire rope listed in (vii) (b).

(viii) The light recovery vehicle shall carry, and use when necessary, equipment designed and manufactured for the purpose of locking the steering of the broken-down or accident damaged vehicle in order to tow in a reverse direction.

## 2 Inspection Requirements

### 2.1 The Vehicle

2.1.1 The Company shall ensure that all recovery vehicles are maintained in such condition that at all times the vehicles conform to the Road Traffic Act and Regulations made thereunder (Construction and Use and Road Vehicle Lighting Regulations) so as to be fit to be used on the road. The Company shall provide to the Contracting Authority evidence of this roadworthiness of the Company's recovery vehicles by successful completion of an inspection by the Vehicle Inspectorate or Freight Transport Association, conducted not less than 14 days nor more than 28 days before the vehicles are required.

2.1.2 The Company shall arrange for all recovery vehicles to be inspected by the Vehicle Inspectorate or Freight Transport Association at not less than 6 monthly intervals and shall provide evidence of inspection and testing results to the Contracting Authority when necessary.

### 2.2 Lifting equipment

2.2.1 All lifting equipment shall be fully certified by an independent competent person to comply with all current legislation.

### 2.3 Reports

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## Appendix 1/20: Recovery of Vehicles

- 2.3.1 A copy of each inspection report shall be:
- (i) provided to the Contracting Authority.
  - (ii) kept in the relevant recovery vehicle.

### 2.4 Record form

- 2.4.1 The Company shall submit weekly to the Contracting Authority duplicate record forms which log the regular checks made on each recovery vehicle. A sample form is given in Sheet 2 of this Appendix.

## 3 Location for Recovery Vehicle(s)

- 3.1 Locations of vehicles shall be determined by the Company and agreed with the Contracting Authority prior to commencement of each stage of the New Works.
- 3.2 The recovery vehicles shall be located within easy access to any Temporary Traffic Management Scheme.

## 4 Communication System

- 4.1 In addition to the requirements of Appendix 1/3, the Company shall:
- (i) provide a secondary 'back up' communications system (e.g. mobile telephone, 2-way radio link or land line) between the recovery base station and all recovery vehicles, and
  - (ii) provide an emergency telephone and direct land line between the recovery base station(s) and the police.
- 4.1.2 The Company shall be responsible for all associated equipment and payment of fees to operate the system which shall be established and fully tested prior to the start of the New Works.

## 5 Location(s) for Vehicle Removal

- 5.1 At all times when the New or Existing Trunk Roads have traffic management due to the New Works, the Company shall be responsible for the removal of shed loads and vehicles that are stationary due to mechanical breakdowns, accident damage or abandoned in the trafficked road. The Company shall accept the instructions of the Contracting Authority or the Police in connection with this service but generally shall be required to remove the obstruction clear of the New Works, such that the running carriageway is cleared in the shortest possible time. Should the Police be unavailable then the driver's consent shall be obtained in writing if possible prior to such removal.
- 5.2 Broken down or accident damaged vehicles shall be removed to a safe location with public telephone facility on the local road network.
- 5.3 If a vehicle cannot be moved immediately and, in the opinion of the Police, the traffic flows are heavy enough to justify such action, the Company shall direct traffic onto an emergency route.
- 5.4 The Company shall make no charge for this recovery service to the owner or driver of the recovered vehicle.

## 6 Explanatory Leaflet

- 6.1 The Company shall ensure that the recovery vehicle operatives issue leaflets to the drivers of vehicles requiring assistance, before recovery commences. These shall have been

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## Appendix 1/20: Recovery of Vehicles

prepared in liaison with the Police and in accordance with Sheet 3 of this Appendix, and have been approved by the Contracting Authority before issue to the recovery firm.

### 7 Limits of Service

- 7.1 The service shall operate within the limits of the New Works Site and/or corresponding temporary traffic management sections.

### 8 Requirements for Recovery Personnel

- 8.1 Suitability: It is the responsibility of the Company to ensure that all personnel involved with vehicle recovery are suitable to work with 'vulnerable' motorists.

- 8.2 Training: The Company shall ensure that all personnel involved with vehicle recovery shall hold a certificate certifying successful completion of an appropriate vehicle recovery course recognised by either the Institute of the Motor Industry (IMI) or the Moor Industry Training Standards Council (MITSC). A copy of each certificate shall be provided to the Contracting Authority not less than 14 days before the commencement of the New Works.

- 8.3 Personal Protective Equipment: In addition to the provisions identified in the Health and Safety risk assessment conducted by the Company, the following items shall be provided for each crew member of the recovery vehicle:

- (i) Safety helmet CE marked to EN 397:1995 Specification for Industrial Safety Helmets;
- (ii) Reflective safety garment complying with sub-Clause 117.18 of the Specification;
- (iii) Boots with steel reinforcement toecaps and/or safety footwear in accordance with BSEN 345;
- (iv) Suitable gloves with the appropriate CE mark; and
- (v) Protective goggles in accordance with BS 2092.

Note: All personal protective equipment should be stored and maintained in good, clean condition.

- 8.4 Identification: The Company shall ensure that all personnel involved with vehicle recovery are issued with the following:

- (i) An identity card which incorporates the name of the recovery Company (or the Company), and the name and a photograph of the holder. This card shall be available for inspection at all times and a copy shall be submitted to the Contracting Authority prior to commencement of the operative working.
- (ii) A reflective safety garment (referred to in 2.13.2 above) which prominently displays the Company's name.
- (iii) Working hours: Recovery vehicles shall be provided 24 hours a day during the New Works. Recovery operatives shall be on duty for a maximum of 12 hours with the provision that no work should be undertaken in the following 12 hour period.

### 9 Record Form

- 9.1 The Company shall submit weekly to the Contracting Authority completed duplicate record forms which log the assistance given by the recovery vehicle and their operatives. Sample forms are given in Sheet 4 of this Appendix.

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**Appendix 1/20: Recovery of Vehicles**

**SHEET 2: FORM FOR 'RECOVERY VEHICLE DAILY CHECK SHEET'**

|                                                                          |        |         |           |                         |                   |          |        |
|--------------------------------------------------------------------------|--------|---------|-----------|-------------------------|-------------------|----------|--------|
| <b>RECOVERY VEHICLE DAILY CHECK SHEET</b>                                |        |         |           |                         |                   |          |        |
| Week Commencing:.....                                                    |        |         |           |                         |                   |          |        |
| Driver's Name:                                                           |        |         |           | Vehicle Number:         | Type/Registration | Mileage: |        |
| Driver to initial against check list below:                              |        |         |           |                         |                   |          |        |
|                                                                          | Monday | Tuesday | Wednesday | Thursday                | Friday            | Saturday | Sunday |
| OIL LEVEL                                                                |        |         |           |                         |                   |          |        |
| WATER                                                                    |        |         |           |                         |                   |          |        |
| ENGINE                                                                   |        |         |           |                         |                   |          |        |
| CLEANLINESS-interior                                                     |        |         |           |                         |                   |          |        |
| CLEANLINESS-exterior                                                     |        |         |           |                         |                   |          |        |
| WIPER/WASHERS                                                            |        |         |           |                         |                   |          |        |
| TYRES                                                                    |        |         |           |                         |                   |          |        |
| LIGHTS                                                                   |        |         |           |                         |                   |          |        |
| Driver's Report (detail any problems):                                   |        |         |           |                         |                   |          |        |
| Action Taken (to solve above problems):                                  |        |         |           |                         |                   |          |        |
| Date:                                                                    |        |         |           | Supervisor's Signature: |                   |          |        |
| <b>COMPLETED SHEET TO BE RETURNED TO CONTRACTING AUTHORITY EACH WEEK</b> |        |         |           |                         |                   |          |        |

**Appendix 1/20: Recovery of Vehicles****SHEET 3: LEAFLET FOR ISSUE BY RECOVERY VEHICLE OPERATIVES TO DRIVERS OF ALL BROKEN DOWN OR ACCIDENT-DAMAGED MOTOR VEHICLES**

**Name of Scheme: Aberdeen Western Peripheral Route / Balmedie – Tippetty.**

**Vehicle Recovery Service – Explanatory Leaflet authorised by Aberdeen City Council as the Contracting Authority for issue to drivers of broken-down and accident-damaged motor vehicles within the above works.**

Leaflet to be distributed by recovery vehicle operatives of the appointed recovery firm on behalf of Aberdeen City Council as the Contracting Authority.

The roadworks operations commence at the 'Roadworks Ahead – 3 miles' sign and end at the 'Roadwork End' sign.

The recovery service provided along the extent of the roadworks operation is free.

Vehicles will be recovered clear of the roadworks operations to a safe location on the local network unless otherwise directed by the police.

It will then be at the discretion of individual drivers of broken-down or accident damaged vehicles requiring assistance to arrange for assistance or the removal of their vehicle to a garage of their choice. The operators of the free recovery service do not make such arrangements.

Useful contact numbers are given below:

- (a) Local Garage – To be populated by the Company
- (b) AA – To be populated by the Company
- (c) RAC – To be populated by the Company
- (d) Greenflag – To be populated by the Company

Part 4: Specification

**Appendix 1/20: Recovery of Vehicles**

**SHEET 4: Information to be provided by the Company**

| VEHICLE RECOVERY LOGSHEET (1 of 2)<br><b>Aberdeen Western Peripheral Route /<br/>Balmedie – Tipperty.</b> |          |                  |            | Recovery Vehicle:<br>..... |      | Week Ending: ..... |   |   |   | Sheet Number: ..... |                      |          |     |                |               |       |         |              |     |         |  |
|-----------------------------------------------------------------------------------------------------------|----------|------------------|------------|----------------------------|------|--------------------|---|---|---|---------------------|----------------------|----------|-----|----------------|---------------|-------|---------|--------------|-----|---------|--|
| Date                                                                                                      | Time     |                  |            | Where?                     | Dir. | Lanes Closed       |   |   |   |                     | Police etc. Present* | Incident |     | Recovery       | Vehicle Type# | Q'ing | Weather | Road Surface |     | Remarks |  |
|                                                                                                           | Call Out | Arrival at Scene | Road Clear | Marker Post Number.        |      | HS                 | 1 | 2 | 3 | 4                   |                      | Acc      | B/d | Tow?***<br>Y/N |               | Y/N   |         | Dry          | Wet |         |  |
|                                                                                                           |          |                  |            |                            |      |                    |   |   |   |                     |                      |          |     |                |               |       |         |              |     |         |  |
|                                                                                                           |          |                  |            |                            |      |                    |   |   |   |                     |                      |          |     |                |               |       |         |              |     |         |  |
|                                                                                                           |          |                  |            |                            |      |                    |   |   |   |                     |                      |          |     |                |               |       |         |              |     |         |  |
|                                                                                                           |          |                  |            |                            |      |                    |   |   |   |                     |                      |          |     |                |               |       |         |              |     |         |  |
|                                                                                                           |          |                  |            |                            |      |                    |   |   |   |                     |                      |          |     |                |               |       |         |              |     |         |  |
|                                                                                                           |          |                  |            |                            |      |                    |   |   |   |                     |                      |          |     |                |               |       |         |              |     |         |  |
|                                                                                                           |          |                  |            |                            |      |                    |   |   |   |                     |                      |          |     |                |               |       |         |              |     |         |  |
|                                                                                                           |          |                  |            |                            |      |                    |   |   |   |                     |                      |          |     |                |               |       |         |              |     |         |  |
|                                                                                                           |          |                  |            |                            |      |                    |   |   |   |                     |                      |          |     |                |               |       |         |              |     |         |  |
|                                                                                                           |          |                  |            |                            |      |                    |   |   |   |                     |                      |          |     |                |               |       |         |              |     |         |  |
|                                                                                                           |          |                  |            |                            |      |                    |   |   |   |                     |                      |          |     |                |               |       |         |              |     |         |  |
|                                                                                                           |          |                  |            |                            |      |                    |   |   |   |                     |                      |          |     |                |               |       |         |              |     |         |  |

\*P-Police  
F-Fire Service  
A-Ambulance

\*\*Y-Tow/Lift  
R-Restart  
F-False Call

#C-Car  
M/C-Motorcycle  
V-Van  
HGV-Heavy Goods Vehicle

Part 4: Specification

**Appendix 1/20: Recovery of Vehicles**

**SHEET 4 (Continued)**

| VEHICLE RECOVERY LOGSHEET (2 of 2)<br><b>Aberdeen Western Peripheral Route /<br/>Balmedie – Tipperty.</b> |                 |                      | Recovery Vehicle:<br>.....         | Week Ending:...../...../..... | Sheet Number:.....  |                          |
|-----------------------------------------------------------------------------------------------------------|-----------------|----------------------|------------------------------------|-------------------------------|---------------------|--------------------------|
| Date and Time                                                                                             | Type of Vehicle | Registration Number. | Name and Address of Driver or Firm | Location of Breakdown         | Nature of Breakdown | Recovery Operator's Name |
|                                                                                                           |                 |                      |                                    |                               |                     |                          |
|                                                                                                           |                 |                      |                                    |                               |                     |                          |
|                                                                                                           |                 |                      |                                    |                               |                     |                          |
|                                                                                                           |                 |                      |                                    |                               |                     |                          |
|                                                                                                           |                 |                      |                                    |                               |                     |                          |
|                                                                                                           |                 |                      |                                    |                               |                     |                          |
|                                                                                                           |                 |                      |                                    |                               |                     |                          |
|                                                                                                           |                 |                      |                                    |                               |                     |                          |



**Appendix 1/21: Information Boards****1 Information Boards**

- 1.1 The Company shall provide and erect 20 number of each display board detailed below in accordance with Scottish Office Technical Memorandum SH3/91 'Trunk Road Schemes Under Construction – Display Signs' which is available from:
- HMSO  
71 Lothian Road  
Edinburgh EH3 AA2  
Telephone: 0131-228-4181
- 1.2 The legends shall consist of:
- Aberdeen Western Peripheral Route / Balmedie – Tipperty**  
DBFO CONTRACT  
ROAD OPENING [ ]
- 1.3 The Company shall determine and insert the anticipated opening date as appropriate.

Part 4: Specification

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**Appendix 1/22: Progress Photographs****1 Progress Photographs**

- 1.1 The Company shall employ a professional photographer to undertake the progress photographs who shall be approved by the Contracting Authority. Prior to the approval of a professional photographer submission of samples of previous work shall be made to the Contracting Authority.
- 1.2 Prints shall be delivered and mounted in albums to the approval of the Contracting Authority and labelled as per sub-Clause 122.2 of the Specification.
- 1.2.1 Proof prints shall be made available to the Contracting Authority within seven days of exposure and any which are unacceptable shall be retaken immediately.
- 1.2.2 All photographs shall also be supplied in JPEG standard format or equivalent.
- 1.3 The following specification fulfils the progress photographs requirements for the New Works.
- 1.3.1 **Ground Progress Photographs**
- (i) A set of ground progress photographs shall be taken prior to commencement of the New Works on site and then at approximately one month intervals or as directed by the Contracting Authority until completion of the New Works from the same location each time;
  - (ii) A set of ground progress photographs shall comprise not less than 300 photographs;
  - (iii) For each photograph, two 254 millimetres x 204 millimetres colour prints shall be supplied;
  - (iv) Two copies of each set of progress photographs shall also be supplied on compact disc in JPEG format;
  - (v) A report shall be provided with each set of photographs detailing the date, location and direction of view for each photograph in the set.
- 1.3.2 **Aerial Progress Photographs**
- (i) A set of aerial progress photographs shall be taken at the commencement of the New Works and further sets of aerial photographs shall be taken at 2 month intervals during the New Works. A final set of aerial progress photographs shall be taken immediately following the completion of the New Works;
  - (ii) A set of aerial progress photographs shall comprise a minimum of 100 photographs, taken with a single lens reflex digital camera;
  - (iii) Two 254 millimetres x 204 millimetres colour prints shall be supplied for each photograph;
  - (iv) Two copies of each set of aerial progress photographs shall also be supplied on compact disc in a JPEG format;
  - (v) Photographs shall be taken from the same height, direction and of the same viewpoint at each 2-month interval;
  - (vi) Viewpoints, heights and directions shall be determined and detailed on an Ordnance Survey map prior to photographs being taken; and
  - (vii) The choice of aircraft used for taking the shots should be such that it shall maximise the accuracy of photographing the viewpoints.

## Part 4: Specification

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**Appendix 1/22: Progress Photographs**

- 1.3.3 The prints and compact discs arising from 1.6 and 1.7 above shall be supplied to the Contracting Authority in suitable albums / cases.
- 1.3.4 The photographer shall be accompanied for both ground and aerial progress photographs by a member of the Contracting Authority personnel or their representatives, should they wish to attend.

**2 Timelapse Photography and Website Use****2.1 General**

- 2.1.1 The Company shall arrange to produce a high quality visual record of the construction of the New Works.
- 2.1.2 In addition to the progress photographs detailed above, the Company shall arrange for timelapse photographs to be taken throughout the construction period at a minimum of twelve locations. The Company shall propose the precise locations and number of cameras to be used for approval of the Contracting Authority within one month of the Commencement Date.
- 2.1.3 In order to obtain the best quality output, cameras shall be set to obtain an image every 10 minutes.
- 2.1.4 The Contracting Authority shall retain the rights to all images obtained by the Company. The Company may use the images in promotional material if so approved by the Contracting Authority, such approval not to be unreasonably withheld.

**2.2 Quality**

- 2.2.1 The Company shall propose the most suitable make and type of camera for each location for the approval of the Contracting Authority.
- 2.2.2 Cameras, lenses and sensors shall be of a professional grade and from a reputable supplier.
- 2.2.3 The camera resolution shall be high enough to allow the final film to be rendered as 1080p HD with a minimum resolution of 2816x1880.
- 2.2.4 The optical parameters of the proposed system shall be capable of adjustment from a remote location.
- 2.2.5 The image interval shall be capable of being adjusted remotely to obtain additional detail during specific activities.
- 2.2.6 The cameras shall be mounted on a stable structure that prohibits movement of the camera as a result of external influences such as wind or vibration.
- 2.2.7 Cameras shall be capable of working at night without significant grain or noise (0.002 lux).

**2.3 Reliability**

- 2.3.1 Each camera location shall have a suitable power and telecoms supply and a backup system shall be available to ensure that there is no loss of data.
- 2.3.2 At each camera location, suitable security measures shall be taken to prevent theft of the equipment.
- 2.3.3 Each camera shall be capable of being remotely monitored to ensure that it is working correctly or as a minimum it should be physically checked daily.
- 2.3.4 The system should be set to automatically restart after a power failure to ensure there is minimal loss of data.

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**Part 4: Specification**

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**Appendix 1/22: Progress Photographs**

- 2.3.5 All recorded images shall be backed up to a site remote from the camera. This shall be either automatic or undertaken on a daily basis to avoid loss of data.
- 2.3.6 Each camera shall be at least IP65 weather protected.
- 2.3.7 The controlling computer shall have storage facilities for 6 years' time lapse shooting with offsite backup facilities of the original image without further compression or adjustment.
- 2.3.8 All cameras, computer control systems and backup systems shall be regularly maintained throughout the Works.

**2.4 Post Production**

- 2.4.1 All images shall be catalogued and stored on a secure site with a suitable back up facility.
- 2.4.2 All images shall be time stamped and catalogued in a calendar format for retrieval by the Contracting Authority.
- 2.4.3 Images from the cameras shall be available to be uploaded by the Company to a project website where the general public can monitor the progress of the New Works. The web image shall be updated every 10 minutes. Any images on the public website shall allow zooming and panning around the still image without pixilation.
- 2.4.4 The images obtained through the Works shall be used to provide a record of the project. This record shall comprise: individual films of between 5 and 10 minutes duration for works undertaken in individual locations; a single complete film of between 45 and 60 minutes duration and a single complete film of between 20 and 30 minutes duration. To obtain a full record of the construction, sequences may be shown from different cameras. In addition due to the nature of the speed of the construction, the rate of progress may be accelerated at a different rate depending on the particular activity.
- 2.4.5 The Company shall supply a story board style post production plan outlining how each final film will look for the approval of the Contracting Authority prior to work on the final film.
- 2.4.6 Due to the overall duration of the project the Company shall allow for the production of annual films of 20 minutes duration, providing a record of construction within the preceeding 12 months.

**3 Web cams****3.1 General**

- 3.1.1 The Company shall provide twenty high definition pan tilt and zoom web cams, which shall provide multidirectional footage of the New Works throughout the construction period.
- 3.1.2 The exact location for each web cam shall be agreed by the Contracting Authority and the chosen locations shall reflect the New Works being undertaken during a particular time period in the construction process. The Company shall be responsible for the relocation of each web cam following such a request being made by the Contracting Authority.
- 3.1.3 The web cams shall be active 24 hours per day, 7 days per week and shall be linked through a secure telecommunication system to the main construction compound. Only authorised representatives of the Contracting Authority and the Company shall be given the security rights to view and alter the orientation of the images being gathered.
- 3.1.4 The web cams shall not be able to be viewed by the general public via the world wide web, unless made available by the Contracting Authority via the project website. Where a web-based system is proposed this shall be provided via a secure internet site. The use of such a facility shall be subject to the approval of the Contracting Authority.

**Appendix 1/22: Progress Photographs**

- 3.1.5 The Company shall be responsible for the maintenance and where necessary, the replacement, of all web cam components. The Company shall also be responsible for the provision of all connections, including power, and the computer software required to operate the web cams from the main construction compound.

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**Part 4: Specification**

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**Appendix 1/23: Substances Hazardous to Health****1 Substances Hazardous to Health**

1.1 The Company shall take all reasonably practicable steps to prevent members of the public being affected, due to its Operations, by substances hazardous to health (as defined in Clause 124 of the Specification), such, as inter alia, silane, bridge deck waterproofing systems, and paints.

**1.2 Restrictions in Relation to Traffic Management Measures**

1.2.1 The Company shall maintain vehicle and pedestrian access to the standards detailed in Appendix 1/18, on existing roads, as well as access to and from properties directly affected by or adjacent to the New Works, when planning measures to protect the public from substances hazardous to health.

1.2.2 If the Company proposes to carry out silane and deck waterproofing treatments for bridges over public roads without an enclosure, the Company shall arrange with the Relevant Authority an overnight closure of the road to allow these operations to proceed.

**1.3 Restrictions in Relation to Working Practices**

1.3.1 The Company shall make available all necessary personal protection equipment and other safety equipment necessary for the protection of all persons who may be exposed to substances hazardous to health in connection with the New Works. The Company shall ensure that all of its staff and sub-contractors' staff requiring such protection are fully trained in the use of the equipment and that the appropriate equipment is used by such persons when there is a risk of exposure to substance hazardous to health.

1.3.2 The Company shall submit detailed method statements, to the satisfaction of the Contracting Authority, stating how the Company shall ensure that the public are not affected by substances hazardous to health which may be used during the construction of the New Works. Such method statements shall state the proposed methods to prevent, control and monitor exposure of the public to the above substances when used or generated in or about the New Works.

**1.4 Measures to be taken to protect members of the public**

1.4.1 Where the Company is using or generating substances hazardous to health in its operations, the work shall be carried out within a fully screened enclosure, otherwise a temporary diversion shall be provided for vehicular and pedestrian traffic. The Company shall take account of the weather conditions, and if any change in these conditions renders either the enclosure or traffic diversions provided unsuitable, any work involving the use or generation of substances hazardous to health shall cease immediately.

1.4.2 If the Company employs temporary diversions as a method of protecting the public from substances hazardous to health, it shall Design all appropriate signing in accordance with chapter 8 of the Traffic Signs Manual 1991.

**1.5 Monitoring to be undertaken by the Company**

1.5.1 The Company shall prepare and maintain a register of all substances hazardous to health which are brought on to the New Works Site. The Company shall operate a documented system to control the issue and use of such material in connection with the New Works subject to the approval of the Contracting Authority.

1.6 Compliance with the requirements of this Appendix shall not in any way relieve the Company of its statutory obligations.

**Appendix 1/24: Quality Management System**

The Company shall institute and operate a quality management system complying with Schedule 5 to this Agreement.

**Appendix 1/26: Temporary Automatic Speed Camera System for the Enforcement of Mandatory Speed Limits at Roads Works (TASCAR)**

**[REDACTED]**



**Appendix 1/26: Temporary Automatic Speed Camera System for the Enforcement of Mandatory Speed Limits at Roads Works (TASCAR)**

[REDACTED]

**Appendix 1/26: Temporary Automatic Speed Camera System for the Enforcement of Mandatory Speed Limits at Roads Works (TASCAR)**

[REDACTED]

**Appendix 1/26: Temporary Automatic Speed Camera System for the Enforcement of Mandatory Speed Limits at Roads Works (TASCAR)**

[REDACTED]

**Appendix 1/27: Temporary Automatic Speed Camera System for the Enforcement of Mandatory Speed Limits at Road Works (TASCAR) – Particular Requirements**

[REDACTED]

**Appendix 1/27: Temporary Automatic Speed Camera System for the Enforcement of Mandatory Speed Limits at Road Works (TASCAR) – Particular Requirements**

[REDACTED]

**Appendix 2/1: List of Buildings, etc, to be Demolished****1 List of Buildings, etc., to be demolished**

- 1.1 The following buildings and structures shall be demolished;
1. the bridge structure carrying the existing A90 Edinburgh to Fraserburgh Trunk Road over the existing B979 Netherley Road (Transport Scotland structure ref; A90-780)
  2. the bridge structure carrying the existing A956 Wellington Road over the existing A90 Edinburgh to Fraserburgh Trunk Road (Transport Scotland structure ref: A90-850)
  3. the corrugated steel culvert carrying the Loirston Burn under the existing A90 Edinburgh to Fraserburgh Trunk Road (Transport Scotland structure ref: A90-846)
  4. the reinforced concrete box culvert carrying the Loirston Burn under the existing A956 Wellington Road (Aberdeen City Council structure ref: A956-D196)
  5. part of the pipe culvert carrying the Megray Burn under the existing Netherley Road Underbridge
  6. the culvert carrying the Green Burn under the existing A96 Aberdeen to Inverness Trunk Road is to be infilled (Transport Scotland structure ref: A96-TBC)
  7. the culvert carrying the Middlefield Burn under the existing A90 Edinburgh to Fraserburgh Trunk Road (Transport Scotland structure ref: A90-TBC)
- 1.2 The following buildings and structures may be demolished prior to commencement of the New Works. Where this has not occurred or has been undertaken in a partial manner, the Company shall be responsible for completing the necessary demolition works.
1. Greenloanings Cottage, Blairs, Aberdeen, AB12 5YB
  2. Carskeach, 252 North Deeside Road, Milltimber, Aberdeen, AB13 0DJ
  3. Pine Lodge, 315 North Deeside Road, Milltimber, Aberdeen, AB13 0DI
  4. Clarewood, 4 Milltimber Brae, Milltimber, Aberdeen, AB13 0DY
  5. Millbrae House, 6 Milltimber Brae, Milltimber, Aberdeen, AB13 0DY
  6. Bridgebank, 3 Milltimber Brae, Milltimber, Aberdeen, AB13 0DY
  7. Crofton, 5 Milltimber Brae, Milltimber, Aberdeen, AB13 0DY
  8. Gairnlea, Blacktop, Milltimber, Aberdeen
  9. International School of Aberdeen, Milltimber Brae, Milltimber, Aberdeen (including sports hall)
  10. Dalriach, Westfield, Milltimber, Aberdeen, AB13 0EX
  11. Grandview, Cloghill, Kingswells, Aberdeen, AB15 8SA
  12. Outbuildings (2No), Denhead of Cloghill, Kingswells, Aberdeen
  13. Outbuilding (1No), Scottish Agricultural College, Craibstone, Aberdeen
  14. 1 Sunnybank Cottage, Craibstone, Aberdeen, AB21 9ST
  15. 2 Sunnybank Cottage, Craibstone, Aberdeen, AB21 9ST
  16. Sunnybank Cottage, Craibstone, Aberdeen, AB21 9ST
  17. 6 The Holdings, Balmedie, Aberdeenshire, AB23 8XR

**Appendix 2/4: Explosives and Blasting****1 Explosives and Blasting**

- 1.1 The use of explosives and blasting within the New Works Site shall comply with the requirements of the Environmental Health Sections of Aberdeen City Council and Aberdeenshire Council, as outlined in Section 1/9 to the Specification.

**Appendix 2/5: Hazardous Materials****1 Hazardous Materials**

- 1.1 The following shall be included as part of Appendix 2/5 to the Specification to be completed by the Company.
- (i) In the event that hazardous or suspected hazardous material is found on site during the New Works the Company shall stop work in the vicinity and cordon the area off. He shall then instigate a contamination survey, which shall be an intrusive investigation and shall include collection of samples of soil and water for chemical testing. Only personnel experienced in this type of work shall carry out this investigation.
  - (ii) Samples collected as part of the investigation shall be subjected to chemical analysis at laboratories with UKAS and MCERTS accreditation for the tests being performed. The MCERTS accreditation extending only to those determinants listed in Annex A of Performance Standards for Laboratories Undertaking Chemical Testing of Soil published by the Environment Agency.
  - (iii) On completion of the investigation and chemical analysis the Company shall arrange for appropriately qualified personnel to undertake a contaminated land environmental risk assessment and prepare a remediation strategy.
  - (iv) The Company shall consult with and conform to the requirements of the Controlling Authorities, which shall include SEPA and Environmental Health Officer, Aberdeen City Council and Aberdeenshire Council, for the remediation of the site.



**Appendix 4/2: Information Required to Demonstrate Compliance of Vehicle Restraint Systems to BS 1317-1, BS EN 1317-2, BS EN 1317-3 and DD ENV 1317-4:2002****1 Information Required**

- 1.1 The Company shall submit the following supporting information demonstrating compliance with BS EN 1317-1, BS EN 1317-2, BS EN 1317-3 and DD ENV 1317-4:2002 to the Contracting Authority for acceptance:

**2 EUROPEAN COMMITTEE FOR STANDARDISATION (CEN) COMPLIANCE<sup>1</sup>**

- 2.1 Initial submission documents to be supplied for consideration of initial type test are as follows:

- a) test report in accordance with BS EN1317-1, Clause 9 (and including any additional test data required under BS EN 1317-3, Clauses 7.3 and 7.4 and DD ENV 1317-4:2002, Clauses 7.3 and 7.4);
- b) video / high speed film of test annotated showing date, test number and performance class;
- c) still photographs of complete installation including anchorage points;
- d) still photographs of vehicle before and after impact;
- e) full drawings of tested items;
- f) certification from the manufacturer that the item tested complies with drawing supplied; and
- g) certificate from test house accredited in accordance with the requirements of Series 400 (MCHW 1.400).

- 2.2 Additional information, which will be required on acceptance of initial type test prior to installation:

- a) manufacturer's specification;
- b) installation drawings;
- c) manufacturer's installation instructions including foundation requirements and test methods to verify their performance;
- d) manufacturer's repair and maintenance manual;
- e) certificate of compliance with the Quality Management Scheme 1 for the Manufacture of Fencing Components<sup>2</sup>;
- f) compliance with the Quality Management Sector Scheme 2 - Supply and Installation of Fences:
  - (i) Sector Scheme 2B for Vehicle Restraint Systems<sup>3</sup>;
- g) certificate of compliance for the Quality Management Sector Scheme 5 for the Fabrication and Installation of Bridge Parapets and Cradle Anchorages<sup>4</sup>:
  - (i) Sector Scheme 5A for The Manufacture of Parapets for Vehicle restraint systems; and
  - (ii) Sector Scheme 5B for The Installation of Parapets for Vehicle restraint systems; and
- h) nominal loads (direct forces, moments and co-existent shears) to be transferred from the parapet to the Structure or foundations<sup>5</sup>.

**Appendix 4/2: Information Required to Demonstrate Compliance of Vehicle Restraint Systems to BS 1317-1, BS EN 1317-2, BS EN 1317-3 and DD ENV 1317-4:2002****Notes**

- <sup>1</sup> All documents are to be supplied in English.
- <sup>2</sup> Item 1.2.2(e) is required for safety barrier systems and transitions.
- <sup>3</sup> Item 1.2.2(f) is required for safety barrier systems and transitions.
- <sup>4</sup> Item 1.2.2(g) is required for vehicle parapets.
- <sup>5</sup> Section 1.2.2(h) is required for vehicle parapets, safety barrier systems and transitions.

Part 4: Specification

**Appendix 4/2: Information Required to Demonstrate Compliance of Vehicle Restraint Systems to BS 1317-1, BS EN 1317-2, BS EN 1317-3 and DD ENV 1317-4:2002**

Sheet 1 of 4

| SUBMISSION FOR COMPLIANCE WITH BS EN 1317-1, BS EN 1317-2, BS EN 1317-3, AND DD ENV 1317-4:2002         |                                     |                                                                                                                                                                                                                                                                                                 |                        |                |
|---------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------|
| TYPE OF VEHICLE RESTRAINT SYSTEM:                                                                       |                                     |                                                                                                                                                                                                                                                                                                 |                        |                |
| CONTAINMENT PERFORMANCE CLASS/PERFORMANCE LEVEL/PERFORMANCE CLASS (*):                                  |                                     |                                                                                                                                                                                                                                                                                                 |                        |                |
| TEST REPORT NUMBER: (Test of )                                                                          |                                     |                                                                                                                                                                                                                                                                                                 |                        |                |
| Test Type: Primary/Complementary Test) (*)                                                              |                                     |                                                                                                                                                                                                                                                                                                 |                        |                |
| TEST NUMBER: TEST DATE:                                                                                 |                                     |                                                                                                                                                                                                                                                                                                 |                        |                |
| (*) delete as appropriate                                                                               |                                     |                                                                                                                                                                                                                                                                                                 |                        |                |
| COMPANY NAME:                                                                                           |                                     |                                                                                                                                                                                                                                                                                                 |                        |                |
| CONTACT:                                                                                                |                                     |                                                                                                                                                                                                                                                                                                 |                        |                |
| ADDRESS:                                                                                                |                                     |                                                                                                                                                                                                                                                                                                 |                        |                |
| Tel:/Fax:/E-mail:                                                                                       |                                     |                                                                                                                                                                                                                                                                                                 |                        |                |
| PRODUCT NAME:                                                                                           |                                     |                                                                                                                                                                                                                                                                                                 |                        |                |
| Initial submission documents to be supplied for consideration of Initial Type Test (ITT)                |                                     |                                                                                                                                                                                                                                                                                                 |                        |                |
| Item                                                                                                    | Test report                         | Comment                                                                                                                                                                                                                                                                                         | Item Received (Y or N) | Date requested |
| 1                                                                                                       | Test report                         | In accordance with BS EN 1317-1, Clause 9 (and including any additional test data required under BS EN 1317-3, Clauses 7.3 and 7.4 and DD ENV 1317-4:2002, Clauses 7.3 and 7.4)                                                                                                                 |                        |                |
| 2                                                                                                       | Video/high speed film               | Of test coverage as specified in relevant part of BS EN 1317 or DD ENV 1317-4:2002<br>Annotated showing date, test number and performance class                                                                                                                                                 |                        |                |
| 3                                                                                                       | Still photographs                   | Of complete installation including anchorage points                                                                                                                                                                                                                                             |                        |                |
| 4                                                                                                       | Still photographs                   | Of vehicle before and after impact                                                                                                                                                                                                                                                              |                        |                |
| 5                                                                                                       | Drawings                            | Fully detailed drawings of tested item                                                                                                                                                                                                                                                          |                        |                |
| 6                                                                                                       | Certification from the manufacturer | Confirming that the item tested complies with drawing supplied                                                                                                                                                                                                                                  |                        |                |
| 7                                                                                                       | Confirmation from test house        | That the test conforms to the relevant requirements of BS EN 1317-1 (and including any additional test data required under BS EN 1317-2, BS EN 1317-3 and DD ENV 1317-4:2002)                                                                                                                   |                        |                |
| Additional information, which will be required on acceptance of initial type test prior to installation |                                     |                                                                                                                                                                                                                                                                                                 |                        |                |
| 8                                                                                                       | System specification                | Manufacturer's specification                                                                                                                                                                                                                                                                    |                        |                |
| 9                                                                                                       | Installation details                | Manufacturer's drawings                                                                                                                                                                                                                                                                         |                        |                |
| 10                                                                                                      | Installation procedures             | Manufacturer's installation instructions                                                                                                                                                                                                                                                        |                        |                |
| 11                                                                                                      | Maintenance Manual                  | Manufacturer's inspection, repair and maintenance instructions                                                                                                                                                                                                                                  |                        |                |
| 12                                                                                                      | Certificate of compliance           | With the Quality Management Scheme 1 for Manufacture of Fencing Components 2                                                                                                                                                                                                                    |                        |                |
| 13                                                                                                      | Certificate of compliance           | With the Sector Scheme 2B for the Supply and Installation of Fences Vehicle Restraint Systems 2                                                                                                                                                                                                 |                        |                |
| 14                                                                                                      | Certificate of compliance           | With the Quality Management Schemes 5 for the Fabrication and Installation of Bridge Parapets and Cradle Anchorages 3<br>Sector Scheme 5A for The Manufacture of Parapets for Vehicle restraint systems; and<br>Sector Scheme 5B for the Installation of Parapets for Vehicle restraint systems |                        |                |
| 15                                                                                                      | Support loads                       | Nominal loads (direct loads, bending moments and shear forces)that have to be transferred from the vehicle restraint system to the supporting Structure or foundation 3                                                                                                                         |                        |                |
| Signature:                                                                                              |                                     |                                                                                                                                                                                                                                                                                                 | Name:                  |                |
| Date:                                                                                                   |                                     |                                                                                                                                                                                                                                                                                                 |                        |                |

Part 4: Specification

**Appendix 4/2: Information Required to Demonstrate Compliance of Vehicle Restraint Systems to BS 1317-1, BS EN 1317-2, BS EN 1317-3 and DD ENV 1317-4:2002**

Sheet 2 of 4

|                                                                                                 |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |        |                             |            |
|-------------------------------------------------------------------------------------------------|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------|-----------------------------|------------|
| SUBMISSION FOR COMPLIANCE WITH BS EN 1317-1, BS EN 1317-2, BS EN 1317-3, AND DD ENV 1317-4:2002 |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |        |                             |            |
| TYPE OF VEHICLE RESTRAINT SYSTEM: Safety Barrier, Vehicle Parapet or Transition (*)             |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |        |                             |            |
| CONTAINMENT PERFORMANCE CLASS/LEVEL (*):                                                        |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |        |                             |            |
| TEST REPORT NUMBER: (Test of )                                                                  |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |        |                             |            |
| Test Type: Primary/Complementary Test) (*)                                                      |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |        |                             |            |
| TEST NUMBER: TEST DATE:                                                                         |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |        |                             |            |
| (*) delete as appropriate                                                                       |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |        |                             |            |
| COMPANY NAME:                                                                                   |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |        |                             |            |
| CONTACT:                                                                                        |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |        |                             |            |
| ADDRESS:                                                                                        |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |        |                             |            |
| Tel./Fax:/E-mail:                                                                               |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |        |                             |            |
| PRODUCT NAME:                                                                                   |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |        |                             |            |
| Initial submission documents to be supplied for consideration of Initial Type Test (ITT)        |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |        |                             |            |
|                                                                                                 |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Specified              | Actual | Satisfactory<br>(Yes or No) | Compliance |
| BS EN<br>1317-1,<br>Table 1                                                                     | Vehicle<br>Details                                   | Impact Conditions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                        |        |                             |            |
|                                                                                                 |                                                      | Total vehicle mass (kg)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ..... (±...)           |        |                             |            |
|                                                                                                 |                                                      | Speed (kmh)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ..... (0, +7 per cent) |        |                             |            |
|                                                                                                 |                                                      | Angle (degrees)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ..... (-1, +1.5)       |        |                             |            |
|                                                                                                 |                                                      | Centre of Gravity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                        |        |                             |            |
|                                                                                                 |                                                      | Vertical height (m)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ..... (± 10 per cent)  |        |                             |            |
|                                                                                                 |                                                      | Longitudinal (m)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ..... (± 10 per cent)  |        |                             |            |
|                                                                                                 |                                                      | Lateral (m)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ± .....                |        |                             |            |
|                                                                                                 |                                                      | Model                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                        |        |                             | N/A        |
| BS EN<br>1317-2,<br>Clause<br>4.2                                                               | Vehicle<br>Restraint<br>System<br>(VRS)<br>Behaviour | The VRS shall contain and redirect the vehicle without breakage of principal longitudinal elements of the system<br><br>No major part of the VRS shall become totally detached or present undue hazard to other traffic, pedestrians or personnel in a work zone<br><br>Elements of the VRS shall not penetrate the passenger compartment that can cause serious injuries are not permitted<br><br>Ground anchorages and fixings shall perform according to the design of the VRS                                                                                                                        |                        |        |                             |            |
| BS EN<br>1317-2,<br>Clause<br>4.3                                                               | Vehicle<br>Behaviour                                 | The centre of gravity (CG) of the vehicle shall not cross the centreline of the deformed system<br><br>The vehicle shall remain upright during and after impact, although moderate rolling, pitching and yawing are acceptable<br><br>The vehicle shall leave the VRS after impact so that the wheel track does not cross a line parallel to the initial traffic face of the VRS, at a distance A (2.2 metres) plus vehicle width + 16 per cent of the length of the vehicle within a distance B (10 metres) from the final intersection (break) of wheel track with the initial traffic face of the VRS |                        |        |                             |            |
| BS EN<br>1317-2,<br>Clause<br>5.3.2                                                             | Installation                                         | The length of the VRS shall be sufficient to demonstrate the full performance characteristics of the system<br><br>If the VRS has to develop tension, end anchorages shall be provided in accordance with the VRS specification. Post foundation shall meet the design specification                                                                                                                                                                                                                                                                                                                     |                        |        |                             |            |

Part 4: Specification

**Appendix 4/2: Information Required to Demonstrate Compliance of Vehicle Restraint Systems to BS 1317-1, BS EN 1317-2, BS EN 1317-3 and DD ENV 1317-4:2002**

|                                                                              |                        |                                                                                                                     |              |        |            |                      |  |
|------------------------------------------------------------------------------|------------------------|---------------------------------------------------------------------------------------------------------------------|--------------|--------|------------|----------------------|--|
| BS EN 1317-2, Clause 4.4                                                     | Severity Indices       | SPECIFIED                                                                                                           |              | ACTUAL |            |                      |  |
|                                                                              |                        | THIV                                                                                                                | Limit 33km/h | THIV   | ..... km/h |                      |  |
|                                                                              |                        | PHD                                                                                                                 | Limit 20g    | PHD    | ..... g    |                      |  |
|                                                                              |                        | ASI                                                                                                                 | Limit 1.4    | ASI    | .....      |                      |  |
| BS EN 1317-2, Clause 5.7, Figure 3                                           | Photo graphic coverage | Photographics coverage shall be sufficient to clearly describe behaviour and vehicle motion during and after impact |              |        |            |                      |  |
|                                                                              |                        | High speed cameras shall be operated at a minimum of 200 frames per second and stills                               |              |        |            |                      |  |
|                                                                              |                        | As recommended in Clause 5.7 and Figure 3                                                                           |              |        |            |                      |  |
|                                                                              | Drawings               | Drawings included                                                                                                   |              |        |            |                      |  |
|                                                                              |                        |                                                                                                                     |              |        |            | N/A = Not Applicable |  |
| FULLY COMPLIES WITH STANDARD: BS EN 1317-1, BS EN 1317-2, DD ENV 1317-4:2002 |                        |                                                                                                                     |              |        |            |                      |  |
| Signature:                                                                   |                        |                                                                                                                     |              | Name:  |            |                      |  |
| Date:                                                                        |                        |                                                                                                                     |              |        |            |                      |  |

Part 4: Specification

**Appendix 4/2: Information Required to Demonstrate Compliance of Vehicle Restraint Systems to BS 1317-1, BS EN 1317-2, BS EN 1317-3 and DD ENV 1317-4:2002**

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|                                                                                              |                         |                                                                                                                                                                                                                                                                                                   |                        |        |                                     |
|----------------------------------------------------------------------------------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------|-------------------------------------|
| SUBMISSION FOR COMPLIANCE WITH BS EN 1317-1, and BS EN 1317-3                                |                         |                                                                                                                                                                                                                                                                                                   |                        |        |                                     |
| TYPE OF VEHICLE RESTRAINT SYSTEM: Crash Cushion (Redirective [R] or Non-redirective [NR] (*) |                         |                                                                                                                                                                                                                                                                                                   |                        |        |                                     |
| TEST REPORT NUMBER: TEST TYPE: (Primary/Complementary Test) (*)                              |                         |                                                                                                                                                                                                                                                                                                   |                        |        |                                     |
| PERFORMANCE LEVEL: VELOCITY CLASS: (Test of )                                                |                         |                                                                                                                                                                                                                                                                                                   |                        |        |                                     |
| TEST NUMBER: TEST DATE:                                                                      |                         |                                                                                                                                                                                                                                                                                                   |                        |        |                                     |
| (*) delete as appropriate                                                                    |                         |                                                                                                                                                                                                                                                                                                   |                        |        |                                     |
| COMPANY NAME:                                                                                |                         |                                                                                                                                                                                                                                                                                                   |                        |        |                                     |
| CONTACT:                                                                                     |                         |                                                                                                                                                                                                                                                                                                   |                        |        |                                     |
| ADDRESS:                                                                                     |                         |                                                                                                                                                                                                                                                                                                   |                        |        |                                     |
| Tel:/Fax:/E-mail:                                                                            |                         |                                                                                                                                                                                                                                                                                                   |                        |        |                                     |
| PRODUCT NAME:                                                                                |                         |                                                                                                                                                                                                                                                                                                   |                        |        |                                     |
|                                                                                              |                         |                                                                                                                                                                                                                                                                                                   | Specified              | Actual | Satisfactory (Yes or No) Compliance |
| BS EN 1317-1                                                                                 | Vehicle Details         | Impact Conditions                                                                                                                                                                                                                                                                                 |                        |        |                                     |
|                                                                                              |                         | Total vehicle mass (kg)                                                                                                                                                                                                                                                                           | ..... (±...)           |        |                                     |
|                                                                                              |                         | Speed (kmh)                                                                                                                                                                                                                                                                                       | ..... (0, +7 per cent) |        |                                     |
|                                                                                              |                         | Angle (degrees)                                                                                                                                                                                                                                                                                   | ..... (-1, +1.5)       |        |                                     |
| BS EN 1317-3, Clause 6.2                                                                     | Crash Cushion Behaviour | Centre of Gravity                                                                                                                                                                                                                                                                                 |                        |        |                                     |
|                                                                                              |                         | Vertical height (m)                                                                                                                                                                                                                                                                               | ..... (± 10 per cent)  |        |                                     |
|                                                                                              |                         | Longitudinal (m)                                                                                                                                                                                                                                                                                  | ..... (± 10 per cent)  |        |                                     |
|                                                                                              |                         | Lateral (m)                                                                                                                                                                                                                                                                                       | ± .....                |        |                                     |
|                                                                                              |                         | Model                                                                                                                                                                                                                                                                                             |                        |        | N/A                                 |
| BS EN 1317-3, Clause 6.3                                                                     | Vehicle Behaviour       | 1) The vehicle shall remain upright during and after the collision although yawing and moderate rolling and pitching are acceptable. The post-impact trajectory of the test vehicle shall be controlled by means of the exit box shown in Figure 2 and specified as detailed in Tables 11 and 12. |                        |        |                                     |
| BS EN 1317-3, Clause 7.3.2                                                                   | Installation            | 1) The installation of the crash cushion for the test shall comply with the structural design details and the on-road system details as given in the design specification.                                                                                                                        |                        |        |                                     |

Part 4: Specification

**Appendix 4/2: Information Required to Demonstrate Compliance of Vehicle Restraint Systems to BS 1317-1, BS EN 1317-2, BS EN 1317-3 and DD ENV 1317-4:2002**

| BS EN 1317-3, Clause 5.4 and Table 4                         | Impact Severity Indices | SPECIFIED<br>Level A: THIV≤44km/h (Tests 1, 2 & 3)<br>THIV≤ 33km/h (Tests 4 & 5)<br>ASI ≤ 1.0<br>Level B: THIV≤44km/h (Tests 1, 2 & 3)<br>HIV ≤ 33km/h (Tests 4 & 5)<br>ASI ≤ 1.4<br>Levels A & B : PHD ≤ 20g | ACTUAL |                      |  |
|--------------------------------------------------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------------|--|
| BS EN 1317-3, Clause 7.7, Figure 4                           | Photo graphic coverage  | High speed cameras and / or high speed video cameras shall be operated at minimum of 200 frames per second.<br>Stills.<br>As recommended in Clause 7.7 and Figure 4.                                          |        |                      |  |
|                                                              | Drawings                | Drawings included                                                                                                                                                                                             |        |                      |  |
|                                                              |                         |                                                                                                                                                                                                               |        | N/A = Not Applicable |  |
| FULLY COMPLIES WITH STANDARD: BS EN 1317-1, and BS EN 1317-3 |                         |                                                                                                                                                                                                               |        |                      |  |
| Signature:                                                   |                         |                                                                                                                                                                                                               | Name:  |                      |  |
| Date:                                                        |                         |                                                                                                                                                                                                               |        |                      |  |

Part 4: Specification

**Appendix 4/2: Information Required to Demonstrate Compliance of Vehicle Restraint Systems to BS 1317-1, BS EN 1317-2, BS EN 1317-3 and DD ENV 1317-4:2002**

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|                                                                       |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |        |                                     |
|-----------------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------|-------------------------------------|
| SUBMISSION FOR COMPLIANCE WITH BS EN 1317-1 AND DD ENV 1317-4:2002    |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |        |                                     |
| TYPE OF VEHICLE RESTRAINT SYSTEM: Terminal                            |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |        |                                     |
| PERFORMANCE CLASS: (Test of )                                         |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |        |                                     |
| Test Type: Primary/Complementary Test (*)                             |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |        |                                     |
| TEST TYPE NUMBER:                                                     |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |        |                                     |
| TEST NUMBER: TEST DATE:                                               |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |        |                                     |
| (*) delete as appropriate                                             |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |        |                                     |
| COMPANY NAME:                                                         |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |        |                                     |
| CONTACT:                                                              |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |        |                                     |
| ADDRESS:                                                              |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |        |                                     |
| Tel:/Fax:/E-mail:                                                     |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |        |                                     |
| PRODUCT NAME:                                                         |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |        |                                     |
|                                                                       |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Specified              | Actual | Satisfactory (Yes or No) Compliance |
| BS EN 1317-1, Table 1<br><br>DD ENV 1317-4: 2002, Clauses 7.4 and 7.5 | Vehicle Details    | Impact Conditions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                        |        |                                     |
|                                                                       |                    | Total vehicle mass (kg)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ..... (±...)           |        |                                     |
|                                                                       |                    | Speed (kmh)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ..... (0, +7 per cent) |        |                                     |
|                                                                       |                    | Angle (degrees)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ..... (-1, +1.5)       |        |                                     |
|                                                                       |                    | Centre of Gravity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                        |        |                                     |
|                                                                       |                    | Vertical height (m)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ..... (± 10 per cent)  |        |                                     |
|                                                                       |                    | Longitudinal (m)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ..... (± 10 per cent)  |        |                                     |
|                                                                       |                    | Lateral (m)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ± .....                |        |                                     |
|                                                                       |                    | Model                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |        | N/A                                 |
| DD ENV 1317-4: 2002, Clauses 5.4 and 5.5.2                            | Terminal Behaviour | <p>Elements of the terminal shall not penetrate the passenger compartment of the vehicle. Deformations of, or intrusions into, the passenger compartment that could cause serious injuries are not permitted.</p> <p>No major part of the terminal shall be come totally detached and come to rest outside the permanent lateral displacement zones defined in Clause 5.4.</p> <p>Anchorage and fixings shall perform to the terminal design specifications and other specified requirements as listed in the rest report.</p> |                        |        |                                     |
| DD ENV 1317-4: 2002, Clause 5.5.3                                     | Vehicle Behaviour  | <p>The vehicle shall not overturn, although rolling, yawing and moderate pitching may be accepted. For the performance class P1 rolling onto a side may be accepted.</p> <p>The exit box values for the specified test are as defined in Figures 5.6 and 7 (as appropriate).</p>                                                                                                                                                                                                                                               |                        |        |                                     |
| DD ENV 1317-4, 2002 Clause 7.3.2                                      | Installation       | The terminal shall conform to the structural design details and with the system                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |        |                                     |



Part 4: Specification

**Appendix 4/2: Information Required to Demonstrate Compliance of Vehicle Restraint Systems to BS 1317-1, BS EN 1317-2, BS EN 1317-3 and DD ENV 1317-4:2002**

|                                                                   |                               |                                                                                                                                                                                                                                     |        |  |  |
|-------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--|--|
| DD ENV<br>1317-4:<br>2002,<br>Clause 5.5.4<br>and Table 5         | Impact<br>Severity<br>Indices | SPECIFIED<br><br>Level A: THIV≤44km/h (Tests 1, 2 & 3)<br>THIV≤ 33km/h (Tests 4 & 5)<br><br>ASI ≤ 1.0<br><br>Level B: THIV≤44km/h (Tests 1, 2 & 3)<br>HIV ≤ 33km/h (Tests 4 & 5)<br><br>ASI ≤ 1.4<br><br>Levels A & B : PHD ≤ 20g   | ACTUAL |  |  |
| DD ENV<br>1317-4,<br>2002 Clause<br>7.7, Figure 7                 | Photo<br>graphic<br>coverage  | Photographic coverage shall be sufficient to describe clearly terminal and vehicle motion during and after impact<br><br>High speed cameras and / or high speed video cameras at a minimum of 200 framer per second.<br><br>Stills. |        |  |  |
|                                                                   | Drawings                      | Drawings included                                                                                                                                                                                                                   |        |  |  |
| FULLY COMPLIES WITH STANDARD: BS EN 1317-1 AND DD ENV 1317-4:2002 |                               |                                                                                                                                                                                                                                     |        |  |  |
| Signature:                                                        |                               |                                                                                                                                                                                                                                     | Name:  |  |  |
| Date:                                                             |                               |                                                                                                                                                                                                                                     |        |  |  |

## Appendix 6/10: Ground Anchorages, Crib Walling and Gabions

### 1 Permanent Soil Nailing

#### 1.1 General

- 1.1.1 This specification for soil nailing is provided as the minimum acceptable standard for soil nailing forming part of the New Works. The Designer may propose more stringent protective measures if these are considered necessary. If the Company wishes to propose any modifications to this Specification then supporting information shall be provided to the Contracting Authority demonstrating that an equivalent quality of product will be provided.
- 1.1.2 Soil nails shall comprise both nail tendon and soil nail head components. Concrete pad soil nail heads shall be used.
- 1.1.3 Soil nail design shall be carried out in line with DMRB HA68/94 and CIRIA C637 Soil Nailing: Best Practice Guidelines taking cognisance where required of Geoguide 7 (Geotechnical Engineering Office, Civil Engineering Department, Government of the Hong Kong Special Administrative Region) for soil nail head design.
- 1.1.4 Corrosion protection for permanent soil nails shall be based on a detailed assessment of degradation risk, in line with CIRIA C637 Soil Nailing: Best Practice Guidelines. As a minimum, hot dip galvanised steel shall be used for tendon and head. In light of long term corrosion of the steel bar tendons, the Company shall allow for a reduction in effective diameter in the design of the soil nails.
- 1.1.5 Soil nails shall be fabricated and installed by a specialist contractor experienced in soil nail installation, using suitably trained personnel and to a method statement approved by the Designer.
- 1.1.6 The Company shall make every effort to create a green vegetated finish to soil nailed slopes including the use of recessed soil nail head assembly, with both erosion control fabric and mesh to encourage vegetation growth.

#### 1.2 Method Statement

- 1.2.1 Soil nailing works shall be carried out in accordance with a detailed method statement, which is to be approved by the Designer. Approval by the Designer shall be sought at least four weeks prior to installing the first soil nails or carrying out associated earthworks. The approved method statement shall be forwarded to the Contracting Authority two weeks prior to installing the first soil nails or carrying out associated earthworks. The method statement shall provide details of:
- a) earthworks including maximum unsupported excavation width and depth;
  - b) method of nail installation, including measures to ensure minimum ground movements above the soil nailed slope and maximum standing time between drilling of holes to insertion of nail tendons;
  - c) soil nail head assembly details, including method of recessing soil nail heads concrete pads;
  - d) method of forming the facing, where appropriate;
  - e) method of connecting the nail head assembly to the facing, where appropriate;
  - f) methods of performing field tests on both sacrificial and production nail tendons;
  - g) method of assessing damage to protective coatings where appropriate;
  - h) grouting procedures including details on bleed, flowcone and strength testing;

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**Appendix 6/10: Ground Anchorages, Crib Walling and Gabions**

- i) temporary support of slopes;
- j) the time after installation before a nail is considered to be fully operational;
- k) maximum exposure period for untreated sections of excavation;
- l) form of the test records; and
- m) steel bar certificates; coupler, steel plate and nuts certificates; reinforcement bar certificates.

1.2.2 Soil nailing on existing slopes shall be undertaken without any risk of reducing the existing slope stability. Any proposed temporary excavation or placing of fill on the slope shall be agreed in advance with the Designer and detailed within the Company's method statement. Any such temporary works shall be reinstated to the original slope profile, or as otherwise agreed with the Designer, without damage or displacement of the soil nailing system.

**1.3 Alterations**

1.3.1 Once approval has been given to the method statement, details shall not be amended without prior approval of the Designer.

**1.4 Company Design**

1.4.1 Soil nails forming part of the New Works shall be designed by the Company to satisfy the requirements of this specification.

**1.5 Sources of Material Supply**

1.5.1 The proposed source of supply of the soil nails and such other materials as covered by this Specification shall be approved by the Designer prior to the commencement of the New Works. Sources of supply shall not be changed without prior approval by the Designer.

1.5.2 Details shall be provided to the Designer of the proposed soil nail reinforcement, splicers / couplers, centralisers, sheaths, load spreading plates, wedge washers, collar nuts, head assembly components and protective coatings for approval prior to the commencement of the Works. Details shall include:

- a) galvanised steel bars
  - (i) galvaniser's certificate;
  - (ii) tensile test results;
  - (iii) bend test and rebend test results; and
  - (iv) galvanised coating (BS EN ISO 1461).
- b) couplers, steel plates, nuts for couplers
  - (i) galvaniser's certificate;
  - (ii) permanent elongation and tensile test results;
  - (iii) galvanised coating (BS EN ISO 1461)

1.5.3 Materials shall be delivered to site in an undamaged condition and shall be handled, stored and protected in such a manner as to avoid corrosion or physical damage. Any soil nails or other such materials covered by this Appendix not conforming to these requirements shall be notified to the Designer for acceptance or rejection. Rejected materials shall be removed promptly from the site.

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**Appendix 6/10: Ground Anchorages, Crib Walling and Gabions****1.6 Reinforcement**

- 1.6.1 High yield steel soil nails shall comply with BS 4449 or equivalent European national standard. The characteristic yield strength of the nail reinforcement shall be a minimum of 500 newtons per square millimetre.
- 1.6.2 The permanent soil nails shall have long term corrosion protection in the form of full length hot dip galvanising. This shall be applied in accordance with BS EN ISO 1461.
- 1.6.3 All permanent soil nails shall be of solid or hollow thread bar type.
- 1.6.4 The galvanised mild steel (“**GMS**”) lock off plates shall be high yield steel conforming to BS 4449 or other equivalent Eurocode national standard. They shall be hot dip galvanised according to BS EN ISO 1461.

**1.7 Splicers / Couplers**

- 1.7.1 Splicers and couplers used in the works which require the removal or repair to damaged coatings shall not be permitted for use in the New Works. Only nails greater than 4 metres in length may be spliced or coupled using a mechanical splicer or coupler. The tensile, bearing and shear strength of a splice or coupler shall be not less than 90 percent of the soil nail when considering the influence of the combination of stresses.
- 1.7.2 Bolts, screws and nuts shall comply with one of the following:
- a) BS EN ISO 898 and BS EN ISO 4016, BS EN ISO 4018 and BS EN ISO 4034, hot dip galvanized in compliance with Clause 1909 of the Specification for Highway Works. The property class of the bolts and screws shall be not less than 4.6, while the property class of the nuts shall not be less than 4.0; and
  - b) stainless steel to BS EN ISO 3506-1 and BS EN ISO 3506-2 grade A4-70.
- 1.7.3 Plain washers shall be of either Form A or Form E complying with BS 4320 and shall be made from one of the following:
- a) cold rolled carbon steel strip CS4 complying with BS 1449: Part 1.1 hot dip galvanized in compliance with Clause 1909 of the Specification for Highway Works; and
  - b) stainless steel strip designation 1.4401 or 1.4436 complying with BS EN 10029, BS EN 10048, BS EN 10051, BS EN 10258 and BS EN 10259.

**1.8 Centralisers**

- 1.8.1 The Company shall provide a minimum of four centralisers at suitable intervals over the total length of the nail. The centralisers shall be spaced at centres not exceeding 1.5 metres with the last centraliser 0.3 metres to 0.5 metres from the end of each nail.
- 1.8.2 The centralisers shall be fabricated from materials that have no deleterious effects on the soil nailing system. The centralisers shall be suitably robust to ensure they suffer no damage during installation, and maintain an appropriate grout cover to the nails and couplers.
- 1.8.3 Centralisers shall be designed to ensure that they permit the free flow of grout but retain the correct centralising function. Where soft or loose soils are encountered during nail installation, centralisers should be installed at closer spacing to ensure that the nails maintain the appropriate amount of minimum cover.

**1.9 Grout**

- 1.9.1 Unless otherwise approved by the Designer, grout for soil nails shall comprise a cement grout consisting of a pumpable mixture of Portland cement and water that can reach a minimum compressive strength of 40 newtons per square millimetre in 28 days. A

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**Appendix 6/10: Ground Anchorages, Crib Walling and Gabions**

minimum of four grout cubes per day shall be made and tested according to BS 1881. The water cement ratio shall not exceed 0.45 to reduce loss of grout into surrounding ground. The grout shall not be subject to bleeding in excess of 2 percent after 3 hours. Admixtures that can control, bleed or retard the set of the grout shall be used only when approved in writing by the Designer. Their use shall be strictly according to the manufacturer's instructions. Flow cone tests, bleed tests and cube strength tests shall be completed on all grout to be used in soil nailing on site and results of each batch are provided to the Designer prior to use.

**1.10 Soil Nail Head Design**

1.10.1 Soil nail head design shall be carried out to ensure both stability of the front face of the slope and design loads that may be applied under soil mobilisation. Sizing of soil nail heads shall be based on Highways Agency HA 68/94 Figure E.2(a) or Geoguide 7 (Geotechnical Engineering Office, Civil Engineering Department, Government of the Hong Kong Special Administrative Region) (Figure 5.4). Concrete pad soil nail head recessed into the slope shall be used (see Geoguide 7.) These recessed pads shall be covered by hessian grow bags or similar and shall allow for a fully vegetated slope upon completion. A double layer of mesh and erosion control matting shall be fixed to the face to allow vegetation growth.

1.10.2 Concrete Pad: The concrete pad construction shall comprise excavation of the head, steel fixing and concreting. Reinforcement shall comprise a minimum of 3 T16 U bars in both directions. A minimum of 50 millimetres concrete cover around the reinforcing bars shall be provided. The number of T16 U bars in both directions shall be dependent upon the required head pad dimensions.

**1.11 Limitations on Construction Plant**

1.11.1 All vehicles and construction plant having a mass more than 1000 kilograms shall be kept at least two metres behind soil nailed facing or external boundaries. Where appropriate, fill within two metres from the facing shall be compacted with compaction plant suitable for the class of fill material having a mass not more than 1000 kilograms.

**1.12 Constructing Soil Nailed Slopes**

1.12.1 The Company shall construct soil nailed slopes from the top down as the soil in front of the cut slope is removed and the nails are installed and grouted at each level as approved in the method statement. The excavation shall be progressively formed in 'lifts' of not more than 2 metres height. Each lift shall be secured with any facing placed and secured in place before the subsequent lift is excavated.

1.12.2 The slope shall be excavated over the required width and depth as approved in the method statement. The excavated lift shall not be exposed for a period in excess of 24 hours or as specified in the method statement without prior approval of the Designer. Excavation shall proceed in stages exposing the minimum amount of soil which will allow the practical and expeditious installation of facing and soil nails while assuring stability of the excavated face and minimising ground movements. In all cases the maximum unsupported slope height shall not exceed 2 metres. Temporary surface protection shall be used for all cut faces exposed to inclement weather.

1.12.3 In anticipation of installing facing, the Company shall clean surfaces of all loose material and other foreign matter.

1.12.4 Where seeding of soil nailed slope faces is required seeding shall take place prior to topsoiling to reduce the risk of seed being washed away. Topsoiling and seeding shall be completed to within a maximum of 2 lifts above the working platform prior to the formation of a new lift. Erosion control matting shall be used for hydroseeding protection.

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- 1.12.5 Adjacent panels of slope facing shall be joined together as instructed by the Designer.
- 1.12.6 Facing shall be terminated at the top and bottom of soil nailed slope as instructed by the Designer and detailed on the earthworks drawings.

**1.13 Drilling**

- 1.13.1 The Company shall drill holes for soil nails to the depth, diameter, alignment and position shown on the Designer's proposed earthworks drawings. Holes shall have a maximum deviation from the position shown on the drawings of +/- 50 millimetres. The maximum deviation of the drill holes from the specified horizontal alignment shall be +/- five degrees.
- 1.13.2 Casing shall not normally be required for soil nail holes. However, if the ground conditions are considered to be loose or of poor quality, casing may be considered. If casing is used, the method shall not promote mining and loosening of the soil at the perimeter of the drill hole or fracture soils with weak stratification planes by use of high pressures. Debris will need to be cleaned out of the hole prior to installation of the tendon.
- 1.13.3 Where the drill holes are located in such a way that debris can fall into the hole from the ground surface the drill hole shall be temporarily covered unless the soil nail is installed and grouted directly on completion of the drilling operation.
- 1.13.4 The drilled holes shall not be left open for more than 24 hours prior to the installation of the nail tendon and grouting, to prevent collapse of the holes. Nails should be grouted the same day.
- 1.13.5 Where soil nails are to be embedded into bedrock and bedrock level is found to be poorly defined the Company shall immediately inform the Designer and provide relevant draft drilling records to the Designer. The Designer shall then confirm bedrock level and hence required nail length prior to nail installation at that location. In all instances the decision of the Designer shall be final.
- 1.13.6 If heavily fractured bedrock material is encountered during drilling for soil nails to be embedded into bedrock the Company shall immediately inform the Designer and provide relevant drilling records to the Designer. The Designer shall then confirm whether longer nail lengths or additional nails are required prior to nail installation.

**1.14 Grouting**

- 1.14.1 Prior to grouting works, all plant, batchers, mixers, pumps, materials etc. must be approved by the Designer. Calibration certificates shall be provided by the Company to the Designer and the Contracting Authority within 1 week of commencement of the grouting works.
- 1.14.2 The soil nails shall be installed in each drilled hole prior to grouting. The installation equipment and its operation shall be such as to minimise disturbance of the soil being treated. The maximum deviation of individual soil nails from the required angle of inclination shall be 1 in 30 unless otherwise specified. Each soil nail shall have a maximum departure from the positions shown on the drawings of +/- 50 millimetres.
- 1.14.3 Mixing equipment shall be used that produces a grout of homogenous consistency and shall be capable of providing a continuous supply to the injection equipment. The injection equipment shall be capable of continuous operation at a constant delivery pressure. The injection equipment shall include a system for recirculating the grout during pauses in the grouting operation.
- 1.14.4 Suitable grout testing shall be carried out (flowcone tests, bleed tests, strength tests, refer section 1.9.1 above.)
- 1.14.5 Grouting of drilled holes shall be carried out during withdrawal of the grout tube fixed onto the soil nail, or during the withdrawal of casing using tremie pipes, using hydrostatic,

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**Appendix 6/10: Ground Anchorages, Crib Walling and Gabions**

gravitational, or pressure grouting. Where pressure grouting is used the grout shall be injected at a pressure not exceeding 15 kilonewtons per square metre in soil and 20 kilonewtons per square metre per metre depth of ground above the hole. Grout shall be injected at the lowest point of the drill hole to ensure that the drill hole is filled without introducing air voids. Grout shall be injected slowly and progressively from the bottom to the top until the hole is completely filled without interruption in the grouting process and clean grout of the same consistency as that injected is seen to run from the top of the hole.

- 1.14.6 For uncased holes, grout pipes shall be fixed to the tendon of the nail to ensure grout cover commences at the lowest end of the nail and grout should be pumped into the hole at a continuous and steady rate, slow enough to prevent entrapping air and to prevent voids forming.
- 1.14.7 Excess quantities of grout should be reported to the Designer to ensure adequate control of grout and prevent grout migration into service ducts, etc.
- 1.14.8 Grouting shall be discontinued if the ambient temperature falls below three degrees Celsius or if the grout temperature falls below five degrees Celsius. When the grout has developed a strength not less than 80 percent of that specified for the 28 day strength, the Contractor shall install the nail head assembly. The small galvanised mild steel (“GMS”) lock-off plate shall be bedded down and the nail tensioned by applying torque that induces a nominal load of 10 kilonewtons. The Company’s programme of operations shall include sufficient time for these requirements prior to further excavation of the slope face.
- 1.14.9 In the case of soil nailed slopes the grout shall fill the hole flush with the slope face. The holes shall be checked after three to five days to check for any grout loss which shall be made good.

**1.15 Damage to Installed Nails**

- 1.15.1 If a soil nail or connection to slope facing or wall is damaged during installation it shall be replaced at the Company’s expense unless otherwise instructed in writing by the Designer.

**1.16 Records**

- 1.16.1 The Company shall keep daily records of the soil nails installed. Copies of these shall be submitted to the Designer within three days following the installation of each soil nail. The records shall show:
- a) date of installation;
  - b) type of bar
  - c) grid and area reference of each soil nail;
  - d) position (chainage and slope length above or below a fixed point or berm), length and inclination of each soil nail;
  - e) length of nail installed into competent strata (based on drillers log observations);
  - f) (date and time of key installation activities (commencing drilling, completing drilling, commencing grouting and completing grouting);
  - g) apparent nature and cause of obstructions (other than drilling in bedrock) and delays including time to resolve;
  - h) grout loss;
  - i) torque force applied to soil nail;
  - j) number and type of tests carried out;

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- k) readings from relevant instrumentation;
- l) relevant calibration certificates; and
- m) soil nail head dimensions and details.

1.16.2 Any unforeseen conditions encountered and reported shall be noted in the records.

**1.17 Testing of soil nails**

1.17.1 Prior to the installation of permanent soil nails, a minimum of six pull-out test nails shall be installed at locations agreed with the Designer and tested accordingly. Pull-out test numbers shall be around three per cent of the total number of working nails, ensuring that all soil types and levels in the slope are tested. In addition, proof testing of permanent nails shall be carried out at a rate of three tests per 100 installed soil nails at locations selected by the Designer and consistent with the progress of soil nailing operations.

1.17.2 Soil nails subjected to pull-out tests shall not form part of the Permanent Works. Any protrusions from the drill hole shall be cut flush with adjacent ground surfaces and the drill hole filled by grouting.

1.17.3 Soil nails shall be subject to the same testing regime whether constructed from solid or hollow thread bar type.

**1.18 Test Equipment**

1.18.1 Displacement measuring gauges that can measure to 0.1 millimetres or better and are mounted on an independent reference frame shall be used to measure movement of the soil nail being tested. The frame shall be securely installed so that readings are not affected by vibration or soil movements. Drilling and other plant movements next to test nails shall be stopped during soil nail testing. The load frame shall ensure that the load is applied in the same direction as the nail and shall not be permitted to within one metre radius of the centre of the drilled hole.

1.18.2 Hydraulic equipment capable of inducing pull-out failure of any selected nail, together with a pressure gauge, calibrated as a unit shall be used to apply the test load. Alternatively the applied load may be monitored utilising a suitably calibrated load cell. The load measuring system shall be capable of measuring the load increments to an accuracy of one percent of the design load or better.

**1.19 Pull-out Testing**

1.19.1 Unless instructed otherwise by the Designer, pull-out test nails are to be tested to 150 per cent of the design working load of the nail or 90 per cent of the ultimate tensile stress of the steel bar, or until pull-out failure occurs, whichever is the lesser. The drill holes shall be formed using water for the pull out test holes and the bar inserted into an open hole, only then should grout be used to grout up the test section of the bond length. Only the bond length or a portion of the bond length shall be grouted. The grouted portion of the test nail can vary, from the lower 2 metres of the bond length to the full bond length as specified by the Designer. The nominal diameter of the drill hole shall be the same as for the permanent soil nails.

1.19.2 The Designer's approval of pull-out test results shall be obtained prior to installation of permanent soil nails for the Works. Unacceptable pull-out test results may result in the need to modify the nail lengths, testing and construction procedure or construction details. Such modifications shall be approved by the Designer and shall require the verification testing procedures to be repeated.

1.19.3 The grouted portion of the test nail shall be grouted in place as part of a regular production grouting process. After grouting, the nail shall not be loaded until the minimum



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**Appendix 6/10: Ground Anchorages, Crib Walling and Gabions**

required 28 day compressive strength of the grout (40 newtons per square millimetre) has been proven by cube tests.

- 1.19.4 The pull-out tests shall be made by incrementally loading and unloading each nail over three cycles. Test loads shall be applied in accordance with testing pro-forma as proposed by the Company but with the approval of the Designer.
- 1.19.5 Pull-out failure is defined as movement in excess of 0.1 per cent of the tested bond length over the full test period or as confirmed by the designer. Movement shall be checked against possible extension of the steel tendon, movement between steel and grout as well as between grout and soil / rock.

**1.20 Proof Testing**

- 1.20.1 Permanent soil nails selected by the Designer shall be proof tested during the main soil nail works. Unless otherwise specified by the Designer these shall be tested by loading to 1.5 times the design working load or until pull-out failure, whichever is the lesser.
- 1.20.2 The proof testing procedure shall be similar to the requirements of Section 1.19 above for pull-out test nails, with the exception that the nails will be loaded and unloaded for only two cycles.
- 1.20.3 If earlier soil nail proof test results are accepted but subsequent tests fail to meet the acceptance criteria the Company shall inform the Designer without delay. All nails installed subsequent to the last successful test shall be proof load tested and if failed replaced.
- 1.20.4 Nails not meeting the acceptance criteria, or any nails identified by the Company or the Designer as being potentially defective shall be recorded by the Company along with the Company's proposals for treatment. These records shall be forwarded within 24 hours from testing to the Designer for comment.

**1.21 Records of Tests**

- 1.21.1 The Company shall keep records of all soil nail tests carried. Field sheets from soil nail tests shall be provided to the Designer within one hour of completion of each test and final copies of the test results provided within three days. The test records shall describe:-
- a) the date of test;
  - b) the area and location of test;
  - c) the number of tests carried out;
  - d) any variations from the specified procedure;
  - e) details of the test results (including graphical result plots of load against displacement);
  - f) any unforeseen conditions encountered; and
  - g) any test procedure problems and how they will be resolved.
- 1.21.2 Test records shall be presented in the format as specified in the agreed method statement.

**1.22 Temporary Soil Nails**

- 1.22.1 To be completed by the Company.

Part 4: Specification

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**Appendix 6/11: Grouting Works (Swallow Holes and Other Naturally Occurring Cavities and Disused Mineworkings)****1 Work not Required**

- 1.1 Any Sections in this Appendix which relate to work or materials not required by the Contract shall be deemed not to apply.

**2 General Safety**

- 2.1 The Company shall be aware of the danger from gas which may be present whilst undertaking the New Works at and around any swallow hole or naturally occurring cavity. The Company shall take all possible precautions in this respect including the supply, maintenance and operation, in accordance with the manufacturer's recommendations, of suitable equipment for monitoring the emissions of flammable or noxious gases. The Company shall consult and comply with the requirements of the local authorities on matters relating to the problems and method of treatment of gas which may arise from the presence of any swallow hole or naturally occurring cavity.
- 2.2 The Company shall be aware of the hazards associated with the respective constituent grout materials and take every precaution necessary in the delivery, storage and use of these materials in the Works to protect the health, safety and welfare of person, animals and the environment.
- 2.3 The Company shall provide with their method statement details of the safety measures they propose to implement in order to comply with the requirements of this Appendix. The Company shall take all necessary safety precautions to safeguard their equipment, employees and the public from all risks.
- 2.4 Grouting works shall be carried out in accordance with a detailed method statement, which is to be approved by the Designer. Approval by the Designer shall be sought at least four weeks prior to commencement of drilling the first hole or carrying out associated probe drilling works. The approved method statement shall be forwarded to the Contracting Authority two weeks prior to commencement of drilling. The method statement shall provide details of:
- (a) the proposed layout of the consolidation treatment works including details of the depth to and size of any swallow hole or naturally occurring cavity to be consolidated and angle of drill holes;
  - (b) the method of drilling holes and associated casing requirements and materials;
  - (c) the proposed flush medium and methods for monitoring flush returns and arisings;
  - (d) the proposed drilling plant;
  - (e) method of monitoring for gas;
  - (f) method of mixing, batching and placement of grout;
  - (g) source of grout materials and proposed grout mix design;
  - (h) grout properties including strength, flow properties and bleed capacity;
  - (i) method of testing grout properties;
  - (j) limitation on placement of grout;
  - (k) method of monitoring grouting pressure;
  - (l) maximum allowable grouting pressures;
  - (m) methods of performing pressure injection test holes;

## Part 4: Specification

**Appendix 6/11: Grouting Works (Swallow Holes and Other Naturally Occurring Cavities and Disused Mineworkings)**

- (n) measures to minimise noise pollution and to prevent flush arising from drilling works and grout spillage running into existing drainage or watercourses;
- (o) form of the daily records and test records; and
- (p) material test certificates and equipment calibration records.

**3 Pollution Control**

- 3.1 The Company shall be aware of the hazards from contaminated water to persons, animals and the environment. The Company shall consult and comply with the requirements of SEPA and the local authorities on matters relating to the hazards from contaminated water, its treatment and disposal. The Company shall take every precaution to contain and dispose of contaminated water, and to prevent contamination of the drainage system and the surrounding environment.
- 3.2 The Company shall be aware of the hazards from grout residues to surface-water courses. The Company shall consult and comply with the requirements of SEPA on matters relating to the hazards from grout residue. The Company shall take every precaution to prevent contamination of surface-water systems and the surrounding environment.
- 3.3 All works shall be carried out without unreasonable noise and disturbance to the site and its environs and shall comply with the noise control requirements of Appendix 1/9.

**4 Services**

- 4.1 The Company shall take every precaution to avoid damage to or interference with apparatus and supplies, whether privately-owned or owned by Statutory Undertakers or local authorities and shall at their own expense rectify any damage done. They shall relieve the Contracting Authority of all claims in respect of any interruption or loss arising from such damage.
- 4.2 The Company shall carry out closed circuit television surveys of the sewers and ducts in the vicinity of the consolidation works before commencement and after completion of the Works.
- 4.3 The survey shall identify the existing condition of the sewers and ducts and their condition upon completion of the grouting works. A written report supported by a copy of the survey on DVD shall be supplied to the Contracting Authority by the Company within 7 days of the completion of each survey. The pre-condition report shall identify any defects within the sewers and ducts and provide proposals to protect them during the grouting works. The post-condition report shall identify any changes in condition of the sewers and ducts since commencement of the grouting works and provide proposals to remedy any defects.
- 4.4 The Company shall remedy any defects or damage to adjacent properties, apparatus and supplies caused by the grouting operations, as determined by the Contracting Authority.

**5 Method**

- 5.1 Where artesian groundwater conditions are encountered measures shall be taken to ensure that no permanent connection / pathway exists between the artesian water source and ground surface.
- 5.2 Drilling, batching, mixing, injecting, testing and the other various operations included in the Works shall be carried out in accordance with this Appendix.

## Part 4: Specification

**Appendix 6/11: Grouting Works (Swallow Holes and Other Naturally Occurring Cavities and Disused Mineworkings)**

5.3 After the area has been treated, it shall be tested by the sinking of further boreholes to confirm the adequacy of the works. The test procedure contained within this Appendix 6/11 shall then be followed.

**6 Drilling**

6.1 Boreholes shall be drilled by rotary or rotary percussive techniques to intercept the swallow hole or naturally occurring cavity and 1.0 metre below the base level.

6.2 All boreholes shall be cased using steel casing within the drift deposits. The casing shall be sealed at an appropriate depth below any swallow hole or naturally occurring cavity so that there is no loss of grout to any superficial deposits during grout injection.

6.3 All boreholes shall be kept open over their full depth to enable them to be used for the injection of pea gravel. Collapsed or obstructed holes shall be redrilled, including the insertion of casing through the obstruction or zone of unstable / collapsing ground if necessary.

6.4 Where soft, loose or broken strata encountered below any swallow hole or naturally occurring cavity then these strata shall also be consolidated by injecting grout under pressure. If the soft, loose or broken strata have been cased then the casing shall be withdrawn above these strata once the borehole has been grouted and pressurised and the grouting process shall be repeated in accordance with this Appendix.

6.5 Casing shall not be withdrawn until the grouting works are complete in any given borehole.

6.6 Drilling shall not take place within 18 metres of areas that have been grouted within the preceding 24 hours.

**6.7 Perimeter Drilling (Optional)**

6.7.1 If required as part of the Company's design of the Works, vertical and inclined boreholes of 100 millimetres minimum diameter shall be drilled around the perimeter of the area to be consolidated, as required, at not more than 3 metre centres.

6.7.2 Drilling of perimeter boreholes shall commence at the point where the swallow hole or naturally occurring cavity is deepest and shall progress in both directions around the boundary of the grouting works.

**6.8 Infill Drilling**

6.8.1 When infilling the swallow hole or naturally occurring cavity, vertical and inclined boreholes of 50 millimetres minimum diameter, shall be drilled to the Company's grid pattern.

**7 Grouting**

7.1 Immediately prior to grouting each hole, the Company shall check that it is clear of obstructions over its full length and capable of being grouted down to the required grouting depth.

7.2 Grout shall be injected via a steel pipe placed to the bottom of borehole or as otherwise agreed with the Contracting Authority. Injection pressures, measured at ground level, should not exceed the lesser of 10 kilonewtons per square metre per metre of overburden or a maximum pressure of 200 kilonewtons per square metre. If one of these criteria is reached quickly, the grout pipes shall be lifted to check that a local obstruction is not preventing the flow of the grout into the strata. A suitably graduated pressure gauge with

## Part 4: Specification

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**Appendix 6/11: Grouting Works (Swallow Holes and Other Naturally Occurring Cavities and Disused Mineworkings)**

an appropriate full scale deflection shall be incorporated within the grout line near the top of the hole. The applied pressure shall be monitored on this gauge, care being taken to reduce any risk of ground heave. The grout pipe is to be raised during progress of injection as limiting pressures are reached or as grout appears at the borehole surface.

- 7.3 As soon as the grout appears at the point of injection, then final pressurisation shall take place using a pressure gauge and grout connection fitted directly to the top of the casing.
- 7.4 During grout testing, limiting pressures shall be used. The use of a lower pressure during grouting and pressurising shall not relieve the Company of the responsibilities laid down in this Appendix relating to testing of treated areas.
- 7.5 The Company shall be responsible for ensuring that no damage to watercourses, existing Structures and existing Public Utilities results from the Grouting Works.
- 7.6 Should the injection pipe become blocked then it shall be removed immediately and cleared.
- 7.7 Immediately before commencing or re-commencing grouting of any borehole the Company shall ensure that it remains open over its full depth and that no collapse has taken place. Where an obstruction is encountered the borehole shall be redrilled and, if necessary, cased through the blockage.
- 7.8 Casing shall not be withdrawn until grouting of any given borehole is complete.
- 7.9 No grout injection shall take place within 18 metres of drilling operations. Infill grouting shall not be carried out until at least seven days have elapsed since the completion of any perimeter boreholes within 10 metres of the proposed infill borehole. Distances shall be measured at the base of the swallow hole or naturally occurring cavity being treated.
- 7.10 Boreholes shall be topped-up to ground level during or immediately after withdrawal of the casing in such a manner as to prevent the overburden collapsing in the hole and to ensure the structure and strength of the grout column. Bores shall be completely filled so that no settlement will occur, or subsequent depression form, in the superficial deposits.
- 7.11 Care shall be taken to ensure that uplift pressures do not develop under any adjacent buildings or structure, including services, during grout injection. Where nearby buildings or structures may be affected by the grouting works, the Company shall take extra care and shall employ special monitoring techniques to record ground movement. Additionally, the Company shall monitor ground levels by precise levelling at intervals, both prior to and during operations.
- 7.12 The Company shall make every effort to remove any metal casing used. If the abandonment of any casing, or part of any casing, is unavoidable then the casing shall be grouted and cut a minimum of two metres below ground level. The location shall be permanently recorded by the Company and details included in the Operations and Maintenance Manuals and other relevant documentation.
- 7.13 **Perimeter Grouting**
- 7.13.1 Grout introduced into the swallow hole or naturally occurring cavity via perimeter boreholes shall be capable of setting quickly without undue spread and in such a way that an efficient barrier is formed around the perimeter of the grouting works. The rate of injection shall be limited to 1.5 tonnes of dry materials per hour per borehole.
- 7.13.2 A maximum of 7 tonnes shall be injected into one hole during any consecutive twelve hour period. In boreholes where cavities in excess of one metre high or interconnecting cavities in excess of 0.5 metres in height are encountered the Company will be required

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to simultaneously place pea gravel with the grout in the ratio 1:1 by weight using an approved hopper device. Consideration shall be given in the design to the addition of a thixotropic or accelerating agent.

**7.14 Infill Grouting**

7.14.1 For infill holes injection is to be carried out in such a way that all the swallow hole or naturally occurring cavity underlying the Site, together with all spaces, breaks and fissures therein, are completely and tightly filled with grout.

7.14.2 If the limiting pressure is not achieved or grout has not appeared at the point of injection after 15 tonnes of grout materials have been placed, the grout tube or pipe shall be removed from the hole and the injection suspended. After a period of at least 12 hours, up to a further 10 tonnes of materials shall be injected. If grout has still not surfaced up the bore, injection shall again be suspended for at least 12 hours and the process shall be repeated with further quantities of 5 tonnes. If the hole is still accepting grout after a total of 50 tonnes of materials have been injected without any sign of the hole being completed the Company shall consult the Designer to determine whether the injection is to be continued or other measures, such as secondary or test holes are required.

7.14.3 Final tightening of each borehole shall be carried out by pumping an approved grout at a pressure, measured by a gauge at ground level, that should not exceed the lesser of 10 kilonewtons per square metre per metre of overburden or a maximum pressure of 200 kilonewtons per square metre.

**8 Grout Mixing, Batching and Pumping Plant**

8.1 The grout mixer shall be capable of producing a homogenous mix with all particles thoroughly wetted and with no segregation.

8.2 It is essential that the mixer is fitted with a reliable automatic weigh batching device capable of consistently measuring the weight of component materials in the approved proportions.

8.3 Water supply to the mix shall be properly monitored by means of a suitable metering device incorporated in the mixer in order to ensure accurate control of the mixing water fed into each batch of dry materials.

8.4 After mixing the grout shall be fed into storage tanks fitted with powered agitators sufficient to ensure that no segregation of component materials occurs and that a continuous flow of grout is maintained at the insertion point.

8.5 Injection of the pre-mixed grouts shall be by means of positive displacement pumps and suitable pressure gauges shall be incorporated in the system to facilitate control of pressures.

8.6 Three valves shall be provided at each junction point to provide means for diversion of the grout away from the injection point when necessary and to prevent undue wastage of grout during transfer of the delivery line from one injection point to another.

8.7 The Company shall include within the relevant method statement details of the proposed methods of all New Works.

**9 Grout materials**

9.1 Cement shall be ordinary Portland cement and shall comply with British Standard Specification BS EN 197 having a compressive strength class (Table 2) of 42.5 newtons

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per square millimetre or greater. The cement shall be suitably stored to prevent damage from the weather.

- 9.2 Sand for grouting shall comply with the requirements of BS EN 12620 and be of a suitable grading suitable for use in the Company's plant.
- 9.3 Pulverised fuel ash ("PFA") shall be fine grained complying with BS 3892: Part 3 Specification for PFA for use in grouts, be of a type suitable as a constituent for grout, meet grout workability and pumpability requirements and obtained from an approved supplier. PFA in storage shall be protected by tarpaulins, other covering or stored in a suitable container to prevent contamination with dust, protect the material from the effects of weather and prevent it becoming an airborne hazard.
- 9.4 Pea gravel shall be single sized 10 millimetres natural gravel and comply with requirements of BS EN 12620.
- 9.5 Bentonite shall be Fulbent 570 as supplied by the Fuller's Earth Contractor Limited, or approved equivalent.
- 9.6 Water:
- (a) All water used in the Works shall be clean, fresh water, free from impurities and obtained from a public water supply.
  - (b) The Company shall pay the appropriate charges for water and shall make all arrangements to ensure a proper and sufficient supply for the duration of the Contract. A hydrant connection will not be accepted.
- 9.7 All mixes shall be appropriate for the groundwater conditions and groundwater chemistry encountered in the swallow hole or naturally occurring cavity.
- 9.8 The Company shall conduct moisture content and grading tests on materials supplied to the Site and shall provide the Contracting Authority with copies of the results of these tests. The frequency and the results of these tests shall be verified for compliance with the design before any grouting is commenced.
- 9.9 All materials shall be kept free from contamination with deleterious matter. Stockpiles of materials shall be kept adequately separated from one another
- 9.10 Unless otherwise directed, all materials shall be in accordance with the appropriate Clauses of the most recent applicable British Standard (or other) and all workmanship shall be in accordance with the appropriate Clause of the most recent British Standard Code of Practice (or other).

**10 Grout Mixes**

- 10.1 The Company shall check for each proposed grout mix that 7, 14 and 28 day cube strength test results and flow test results comply with the design of the Works.
- 10.2 The minimum 28 day crushing strength shall be 1 meganewton per square metre.
- 10.3 All grout used in connection with the Contract shall contain cement.
- 10.4 Grout introduced at the perimeter probe hole locations shall have a cement content of between 120 and 150 kilograms per cubic metre of mixed volume.
- 10.5 Grout introduced at infill hole locations shall have a cement content of between 80 and 100 kilograms per cubic metre of mixed volume.

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- 10.6 Using a "Colcrete" Flowmeter the following criteria shall apply with regard to grout flow properties.
- (a) Perimeter and additional probe grout shall flow within the limits 300 millimetres to 400 millimetres.
  - (b) Infill grout shall flow within the limits 400 millimetres to 600 millimetres.
- 10.7 The Company shall undertake testing of grout mix proportions and materials. Results of these tests shall be verified for compliance with the design before any grouting is commenced.

**11 Grout Tests**

- 11.1 Throughout the course of grouting works the Company shall take cubes with 100 millimetre sides in sets of six at the rate of one set per day. The cubes shall be cured and crushed at a UKAS accredited laboratory. The cubes shall be uplifted and transported to the laboratory within 36 hours of their casting. One cube shall be crushed at 7 days, one at 14 days and two at 28 days. The test will be taken as conforming if both 28 day strengths exceed the minimum requirement contained in this Appendix. The Company shall permanently and clearly mark cubes for identification, and shall keep records which shall indicate exactly the location of the grout or concrete, the flow test readings of the mix, the date of placing and mix reference. The marking of cubes, handling, storage and testing shall be in accordance with BS 1881.
- 11.2 The Company shall test the flow properties of each batch of mixed grout in accordance with this Appendix relating to grout mixes before it is injected and shall carry out such additional random tests as may be required to ensure compliance with the design of the Works.

**12 Testing of Infilled Grout**

- 12.1 On completion of the grouting works the Company shall sink probe test holes into the filled swallow hole or naturally occurring cavity and shall carry out grout injection tests to establish the adequacy of the works already completed. The Company shall provide details of numbers and locations of test holes to be undertaken to the Contracting Authority. Testing shall not be undertaken until a minimum of 48 hours has elapsed since the completion of treatment in the area to be tested.
- 12.2 These tests shall consist of injecting grout into the test holes in the normal fashion and noting the quantity required to produce an injection pressure of 200 kilonewtons per square metre or such lower pressure as specified in the design of the Works. When this injection pressure has been reached the injection pump shall be switched off and a suitable valve at the top of the hole closed to isolate any line pressure. The test shall be deemed successful where the quantity of grout injected is less than 0.5 tonnes or such higher quantity as specified in the design and where the pressure has not dropped by more than 10 per cent in three minutes.
- 12.3 The Company shall ensure that a good seal is maintained during the test.
- 12.4 The Designer may in addition require core samples to be taken by rotary coring to check the adequacy of the grouting operation. Rotary coring shall be carried out in accordance with the MCHW, Volume 5, Section 3, Part 4.
- 12.5 Should any of the tests reveal incomplete grouting works or other defect, the Company shall make good such works in order to comply with the requirements of the Contract.



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**Appendix 6/11: Grouting Works (Swallow Holes and Other Naturally Occurring Cavities and Disused Mineworkings)****13 Cold Weather**

- 13.1 When the temperature of the air is near or below the freezing point of water, grouting works shall only be permitted at the entire risk of the Company, who shall take precautions to ensure that the materials are free from frost and to protect the grout or concrete from freezing.
- 13.2 The Company shall make good any works which may be damaged by frost. For the purpose of recording the air temperature a reliable maximum / minimum thermometer is to be located on the New Works Site. Precautions against cold weather conditions shall be such as to ensure that the grout shall, at no time during mixing, depositing, delivery to a point of injection or setting reach a temperature of, or below, five degrees Celsius.
- 13.3 The Company shall be deemed to have included for all measures necessary to comply with the aforementioned requirements.

**14 Records**

- 14.1 The Company shall prepare a daily drilling journal and a separate daily grouting record for individual boreholes including test boreholes, providing the information in Section 14.2 below and this shall be provided to the Contracting Authority the day after the date the records relate to.
- 14.2 Daily drilling journals shall include:
- (a) job name, location, borehole reference number and date;
  - (b) O.D. level at borehole location;
  - (c) date;
  - (d) contractors name;
  - (e) staging level - embankment boreholes;
  - (f) inclination of borehole;
  - (g) plant in use, type of flush and crew details;
  - (h) method of boring or drilling, flushing medium and type of drill bit;
  - (i) type / diameter and depth of all casing used;
  - (j) diameter and depth of hole at beginning and end of each working day/shift;
  - (k) depth of each change of stratum;
  - (l) rate of penetration;
  - (m) details of any loss of flush;
  - (n) occurrence of voided, soft or broken ground;
  - (o) delays, breakdowns and / or obstructions with accompanying reason;
  - (p) details of underground services or drains located;
  - (q) daily and cumulative length drilled;
  - (r) details of any settlement or ground heave;
  - (s) description, with identification of the stratum and whether it is broken or intact;
  - (t) depth at which groundwater is encountered (if apparent);

## Part 4: Specification

**Appendix 6/11: Grouting Works (Swallow Holes and Other Naturally Occurring Cavities and Disused Mineworkings)**

- (u) depth / description of any contaminated material or groundwater encountered;
- (v) details of any emission of gas, water, foul air etc.;
- (w) depth of completed hole; and
- (x) gas monitoring results.

## 14.3 Grouting records shall include:

- (a) location and borehole reference number;
- (b) contractors name;
- (c) date and times of grouting and grout crew details;
- (d) details of type of injection and grout line dimensions (e.g. tremmie injection through 5 millimetre diameter line);
- (e) grout materials employed;
- (f) grout pressures recorded, with the corresponding depths;
- (g) weight of grout mix accepted including the water / cement ratio and weights of the constituent components of the mix;
- (h) the accurate position, inclination and orientation of abandoned casing; and
- (i) delays and breakdowns with accompanying reason.

14.4 All daily drilling journals and grouting records shall be included in the as-constructed records.

14.5 The Company shall within three months of completion of the grouting works prepare typical drawings and sections to indicate where and how much grout was placed. It shall prepare a report on the grouting works outlining the conditions encountered and the final treatment carried out. A copy of this report shall be included in the as-constructed records.

**15 Setting Out and Labelling**

15.1 For ease of reference, each borehole used in the grouting works shall be clearly marked on the Site with its reference number, depth and inclination. This labelling shall remain legible until the casing has been withdrawn and the bore is complete.

15.2 Setting out stations and reference lines used in the location of borehole positions shall be established on the New Works Site by means of permanent markers, clearly visible at all times.

15.3 A system shall be employed to record those boreholes which are completed and those which continue to accept grout. This system shall operate both at the borehole and in the Company's office.

**16 Personnel for Grouting Works**

16.1 The Company, Designer and the Checker shall employ personnel who have relevant experience of grouting works.

16.2 The Company and the Designer shall have in charge of the grouting works a suitable number of engineer(s) experienced in the methods being employed and the said engineer(s) shall be present at the Site at all times when drilling, grouting or testing is in progress.

**Appendix 6/11: Grouting Works (Swallow Holes and Other Naturally Occuring Cavities and Disused Mineworkings)****17 Waste Management (Pulverised Fuel Ash)**

- 17.1 The Company is responsible for supplying appropriate grout constituent materials.
- 17.2 PFA, a typical constituent of grout, is now regarded by the Environment Agency to be a waste material and, accordingly, its use in these sorts of works comes under the various waste management regulations and legislation.
- 17.3 If the Company proposes to use PFA in the New Works then he will be responsible for discharging any liabilities and responsibilities in this respect and shall indemnify the Contracting Authority against any associated claims.
- 17.4 Copies of relevant correspondence, licences, permits and similar that may be required to discharge these responsibilities are to be copied to the Contracting Authority before use of PFA will be permitted.
- 17.5 As an alternative to using PFA, a suitable substitute material, or pre-bagged product may be used in the New Works, subject to approval by the Designer.

## Part 4: Specification

**Appendix 6/12: Instrumentation and Monitoring****1 Instrumentation and Monitoring**

- 1.1 This Appendix sets out the minimum instrumentation and monitoring requirements for the Works. The Company shall amend the Appendix to reflect any additional monitoring proposed.
- 1.2 The Designer shall design a geotechnical instrumentation and monitoring scheme appropriate for his design incorporating the following minimum requirements:

| <b>Instrument Type</b>     | <b>Minimum Requirement</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Surface Movement Peg (SMP) | As specified by the Designer.                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Inclinometer (INC)         | As specified by the Designer                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                            | Inclinometers shall be installed by a specialist geotechnical instrument contractor and shall be industry standard kit suitable for monitoring slope instability movements. Inclinometer installations shall extend a minimum length of two metres into competent bedrock.                                                                                                                                                                                                            |
| Piezometers (PZ)           | As specified by the Designer                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                            | The design and installation of piezometers shall be suitable to monitor groundwater levels within the deposits in which they are installed.                                                                                                                                                                                                                                                                                                                                           |
| Standpipes (SP)            | Existing installations are to be monitored for gas / groundwater level as required by the Company.<br><br>Monitoring of groundwater levels immediately adjacent to Network Rail, BP and Shell properties and any associated adjacent properties shall be undertaken throughout the construction period. The Designer shall specify the location of instrumentation to comply with this requirement.<br><br>Other standpipe monitoring requirements to be as specified by the Designer |
|                            | The design and installation of standpipes shall be suitable to allow for monitoring of groundwater levels and sampling of groundwater, within the deposits in which they are installed.<br><br>All monitoring standpipes shall have dedicated sampling equipment installed for long term groundwater sampling.                                                                                                                                                                        |
| Other Instrumentation      | As specified by the Designer                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

## Part 4: Specification

**Appendix 6/12: Instrumentation and Monitoring**

- 1.3 All instruments shall be numbered and labelled by type, mainline chainage and offset from the proposed alignment centreline. For example, surface movement pegs at chainage 200.00 metres off-set to the right and to the left of the proposed alignment centreline by 20 metres would be labelled as SMP 200/+20 and SMP 200/-20 respectively.
- 1.4 All instruments shall be installed by the Company prior to construction at any specific location and shall be surveyed by the Company to provide X, Y, Z co-ordinates for each station to an accuracy of +/-2 millimetres.
- 1.5 The Company shall calibrate and monitor all instruments for baseline readings at least two weeks ahead of adjacent or overlying construction during which the Company shall take three sets of base readings. The results shall be provided to the Designer to confirm that all readings are repeatable before adjacent Works are commenced.
- 1.6 All monitoring stations shall be clearly marked with a unique reference number as above. The Company shall ensure that all instruments are protected from damage during installation and construction operations. As appropriate on completion of installation the Company shall provide / erect temporary surface protection of the instruments so that damage by site traffic or other plant does not occur.
- 1.7 Monitoring instruments shall be read as a minimum requirement to the frequency and accuracy indicated in the following table:

| <b>Instrument</b>             | <b>Location</b>              | <b>Frequency of reading</b>                                               | <b>Accuracy</b>                                                              |
|-------------------------------|------------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------------------|
| Sub-formation Movement Points | As specified by the Designer | As specified by the Designer                                              | As specified by the Designer                                                 |
| Surface Movement Points       | As specified by the Designer | As specified by the Designer                                              | As specified by the Designer                                                 |
| Inclinometer                  | As specified by the Designer | As specified by the Designer                                              | +/- 1 millimetres or greater accuracy as specified by the Designer           |
| Piezometer                    | As specified by the Designer | Minimum, monthly, or any increased frequency as specified by the Designer | +/- 10 millimetres maximum, or greater accuracy as specified by the Designer |
| Standpipes                    | As specified by the Designer | Minimum, monthly, or any increased frequency as specified by the Designer | +/- 10 millimetres maximum, or greater accuracy as specified by the Designer |
| Other instrumentation         | As specified by the Designer | As specified by the Designer                                              | As specified by the Designer                                                 |

**Appendix 6/12: Instrumentation and Monitoring**

- 1.8 Monitoring shall be undertaken throughout the duration of the Works or until a time agreed with the Designer. In the case of surface movement monitoring this is likely to be when negligible movement has been demonstrated following the completion of adjacent earthwork activities.
- 1.9 In the case of surface movement monitoring points and inclinometers any changes in position or level beyond the required accuracy tolerances set out in the above table shall be reported immediately to the Designer.
- 1.10 The results of all monitoring shall be reviewed by the Designer not more than 24hrs after readings are taken. The Company shall make available the results of all monitoring data to the Designer in digital (Excel Spreadsheet) format and also as a graphical plot (Excel Format) such that changes with time are apparent. The exact format of the presentation of results is to be agreed with the Designer. Following each measurement, the Company shall update the database and graphical output immediately.
- 1.11 All monitoring data shall be made available to the Contracting Authority as and when requested.

**Appendix 12/1: Traffic Signs: General****1 Traffic Signs – General**

- 1.1 As part of the New Works the Company shall erect appropriate signage for existing tourist destinations which are currently signed on the road network.

**Appendix 12/2: Traffic Signed – Marker Posts****1 Hazard Marker Posts**

- 1.1 Hazard marker posts shall be capable of being overrun by vehicles so that they deflect and spring back to an upright position without shattering in all weather conditions and with little or no vehicular damage.
- 1.2 Hazard marker posts shall be fitted with anti-removal tabs below the ground
- 1.3 The reflectors shall be of Class 1 retro reflective sheet material to comply with Diagram 561 of Traffic Signs Regulations and General Directions 1994. The retro reflective sheeting shall be protected from damage from over-running vehicles by raised edges or other acceptable methods.
- 1.4 The hazard marker post shall have the main body self-coloured black with a highly visible weather resistant white band to the sizes quoted in Figure 4.84 in Chapter 4 of the Traffic Signs Manual.
- 1.5 The top of the hazard marker post shall be installed so that the top of the post is 750mm-1000mm above ground level.



## Appendix 12/3: Traffic Signs – Road Markings and Studs

### 1 Road Markings

- 1.1 The colour location and material type for permanent or temporary road markings shall be specified as part of an order for road marking.
- 1.2 Ribbed road markings shall be formed of hot applied thermoplastic formulated to allow the formation of transverse ribs. The transverse ribs shall not be less than 8mm and not greater than 10mm in depth and shall be at 500mm spacing except on slip roads where the spacing shall be reduced to 250mm.
- 1.3 All road markings shall provide a skid resistance level of 55.
- 1.4 Temporary road markings shall be laid in accordance with BSI document BS 6518 1985.
- 1.5 Where existing road markings shall be required to be covered over the cover application shall comply with BS 7962: 2000.

### 2 Road Studs

#### 2.1 General Requirements

- 2.1.1 Any road stud which has become displaced from its socket or is loose or broken shall be removed from the carriageway immediately and the resulting socket shall be filled with bituminous instant repair material as described in Clause 970AR.
- 2.1.2 Replacement road studs shall not be installed in old sockets. New road studs shall be placed in new sockets with a clearance of at least 300mm from the original sockets. Existing or refurbished road stud sockets may be re-used but in all cases shall be fitted with new inserts.
- 2.1.3 Road studs inserts shall be replaced when failing to meet the requirements of Schedule 2 to the Agreement.
- 2.1.4 Road studs to be used for this Agreement shall be as noted below.

#### 2.2 Red White and Green Studs

- 2.2.1 All red white and green studs shall comply with Clause 1213.3. Red and green reflectors shall be uni-directional. White reflectors shall be bi-directional.
- 2.2.2 Where installation of road studs shall be the subject of a traffic regulation order at new locations Method No 1 as detailed in Paving Instruction 1984 Edition (Red) shall be used. This shall be Installation Method No 1.

#### 2.3 Amber Studs

- 2.3.1 Amber studs shall be of the corner-cube reflection type and shall be fixed in accordance with the manufacturer's written recommendations. (Installation Method No 4)

#### 2.4 Temporary Road Marking Studs shall be either

- 2.4.1 Hot melt adhesive type.
- 2.4.2 Self-adhesive type.
- 2.4.3 Fixing of studs shall be in accordance with manufacturer's written recommendations with respect to whether the studs shall be fixed to existing or new surfacing.

#### 2.5 Existing metal CHART node studs

- 2.5.1 Existing metal CHART node studs shall be removed to ensure minimum damage to carriageway. Reinstatement shall be carried out using filled bitumen or bituminous instant repair material.

**Appendix 12/3: Traffic Signs – Road Markings and Studs****2.6 Cored thermoplastic road markers to be installed as CHART node points**

- 2.6.1 Cored thermoplastic road markers to be installed as CHART node points shall use the following method (Method No 5)
- (i) a 100mm diameter x 20mm deep pocket shall be formed using a central pilot bit surrounded by an annular bit;
  - (ii) the base of the pocket after breaking out the surfacing material shall be left jagged.
- 2.6.2 The pocket shall be filled with hot thermoplastic material to the uppermost edge of the pocket projecting slightly above the road surface and the material allowed to cool and set to form a stud.
- 2.6.3 The material shall consist of a plastic resin with white filler and reflective glass particles to BS 3262.

## Appendix 12/5: Traffic Signs – Traffic Signals

### 1 Permanent Traffic Signals

- 1.1 All traffic signal equipment supplied must be of a type approved by the Contracting Authority and comply with the latest edition of the relevant British Standards, TR Specifications, The Traffic Signs Regulations and General Directions, The Zebra, Pelican and Puffin Pedestrian Crossing Regulations and General Directions and IEE Wiring and “Electricity at Work” Regulations. The Design and method of maintenance must meet the above regulations.
- 1.2 Statutory Approvals must be in place for all traffic signs and signals (including associated control equipment) and copies of letter of acceptance must be submitted to the Contracting Authority prior to construction.
- 1.3 All lanterns, including nearside red man/green man lanterns, must be compatible with the proposed controller for fault monitoring, including full red lamp monitoring for installations with controlled pedestrian facilities.
- 1.4 Where required in the Contract to supply and install traffic signal heads and other traffic signal equipment, the Company shall provide equipment complying with the following requirements:
- 1.5 **Signal Heads**
- 1.5.1 Traffic Signal heads shall conform to TR2206 Specification of Road Traffic Signals, BS EN 12368 Traffic Control Equipment, Signal Heads, BS EN 50556 Road Traffic Signal Systems.
- 1.5.2 LED Signal Heads
- Aspect Types:- 200 mm diameter red, yellow and green roundels. 200 mm green left, right and straight on arrows.
- Signal heads shall comply with the following BS EN 12368 Classes:
- Optical Characteristics:- Luminous Intensity Class 3/2  
Luminous Distribution Table 4  
Phantom Class 5  
Colour (inc. combined Colour) Compliant  
Luminance Uniformity =1:10
- 1.5.3 LED Pedestrian Heads
- Aspect Types:- 200 mm diameter red and green pedestrian symbols.
- Signal heads shall comply with the following BS EN 12368 Classes:
- Optical Characteristics:- Luminous Intensity Class 3/2  
Luminous Distribution Table 4  
Phantom Class 5  
Colour (inc. combined Colour) Compliant  
Luminance Uniformity =1:10

## Part 4: Specification

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**Appendix 12/5: Traffic Signs – Traffic Signals****1.5.4 Push Button**

Operating Voltage:- All push buttons for pedestrian lights shall operate on a low voltage, 48 V, 40 W supply.

Push Buttons shall incorporate a “tactile cone” indicator at the base of the unit. (A tactile cone indicator serves to assist visually impaired pedestrians in identifying when it is safe to use a pedestrian crossing, by rotating when the pedestrian phase is in operation)

**1.6 Nearside Units for Puffin and Toucan & Demand Units**

1.6.1 Nearside units will comply with the latest version of TR2511 Performance specification for Nearside Signal and Demand Units.

1.6.2 All nearside and demand units must be installed in accordance with the manufactures instructions.

1.6.3 Nearside and demand units will be aligned in accordance with the approved site specific traffic signal drawings.

1.6.4 Demand units shall incorporate a “tactile cone” indicator at the base of the unit. (A tactile cone indicator serves to assist visually impaired pedestrians in identifying when it is safe to use a pedestrian crossing, by rotating when the pedestrian phase is in operation).

**1.7 Tactile Equipment**

1.7.1 Tactile cones and associated equipment will comply with the latest version of TR2508 Performance Specification for Tactile Equipment for use at Pedestrian Crossings.

**1.8 Audible Equipment**

1.8.1 Where it is proposed to install Audible units they shall comply with the latest version of TR2509 Performance Specification for Audible Equipment for use at Pedestrian Crossings.

**1.9 Traffic Signal Controller Cabinets**

1.9.1 Foundations for traffic signal controller cabinets shall be located in positions such that when the access doors of the installed cabinet are in the open position they cause minimal obstruction of the footway. It shall be possible to open the access doors fully and consideration must be given to the safety of operatives and Non-Motorised Units during maintenance operations. If it is necessary to site the cabinet adjacent to the kerb then it shall not be possible for the access doors to be opened over the carriageway and the cabinet shall be sited at least 0.5m from the kerb edge.

1.9.2 The cabinet shall be positioned so that it does not obstruct the view of pedestrians waiting at traffic signal controlled crossings or motorists on their approach to the crossing. Where ever possible, the cabinet shall be sited at the downstream side of signal controlled pedestrian crossings. Cabinets shall be positioned such that a traffic engineer can view the operation of the signals whilst standing at the front of the cabinet.

1.9.3 Case root base cabinets shall have the root located on one or more paving slabs which are themselves securely bedded and properly levelled at the appropriate depth. A bed of ST4 concrete shall be laid over the base of the root and paving slab(s). The top of the bed, when finished, shall be 1/3 of the way up the legs of the root and the site of the bed smoothed. That part of the excavation within the case root shall be back filled with compacted dry fine sand or pea gravel and topped with dry fine sand after the ducting has been installed and the cables have been terminated. The remainder of the excavation

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**Appendix 12/5: Traffic Signs – Traffic Signals**

around the cabinet is to be backfilled with cement bound material to base course level and the surrounding area reinstated in accordance with the requirements of Clause 706 of the Specification.

- 1.9.4 A layer of epoxy resin 6 mm thick is to be laid on top of the sand to prevent ingress of gas and moisture into the cabinet through the root and to provide a seal with the case.
- 1.9.5 Pole mounted cabinets are to be mounted on poles correctly aligned in vertical positions. The excavation shall be adequate to allow the pole to be planted to the depth recommended by the manufacturer, typically 650 mm. The bottom of the hole around the pole is to be filled with at least 300mm of ST4 concrete to the bottom of the cable entry slot. When cable laying and testing is complete, the remainder of the backfilling shall be completed. The cable entry to the cabinet shall be effectively sealed against ingress of moisture into the unit.
- 1.9.6 Once the electronic modules are installed in the cabinet, the door seals and locks shall be checked and the base sealed as soon as possible to stop any moisture ingress to the modules.
- 1.9.7 When a cabinet is mounted on a verge of unmade ground a concrete pad, which may consist of paving slabs, shall be laid around the controller to a minimum width of not less than one metre on those sides to which access to the equipment is required.
- 1.9.8 All controllers and auxiliary cabinets shall be supplied with a metal case with a hinged main access door, with locking facilities.
- 1.9.9 Cabinets shall be IP55 rating.

**1.10 Controller Equipment**

- 1.10.1 The Company shall ensure that all controllers are fully UTMC compliant allowing fault monitoring equipment such as an Outstation Monitoring Unit (O.M.U), Outstation Transmission Unit (O.T.U) or MOVA Unit to be supplied by any manufacturer.
- 1.10.2 The Company shall install an Outstation Monitoring Unit (OMU) or Outstation Transmission Unit (O.T.U) of a type approved by the Overseeing Organisation.
- 1.10.3 The Company will install a MOVA unit in the controller at locations agreed with the Overseeing Organisation.
- 1.10.4 ELV and LV controllers will conform to the latest version of TR2500 Specification for Traffic Signal Controller and BS EN 12675 Traffic Signal Controller Functional Safety Requirements.

**1.11 Traffic Signal Poles**

- 1.11.1 The Company shall comply with DMRB Volume 8 Section 2 Part 2 TA 89/08 Use of Passively Safe Signposts, Lighting Columns and Traffic Signal Posts to BS EN 12767.
- 1.11.2 The Company shall be responsible for specifying which performance class is required.
- 1.11.3 All poles shall be installed in accordance with the manufacturer's recommendations, or as otherwise instructed by the Overseeing Organisation.
- 1.11.4 Poles shall NOT be supplied with pre drilled holes for nearside and demand units.
- 1.11.5 All poles shall numbered in accordance with the numbering system used on the site specific drawings with appropriate labels, labels to be approved by the Overseeing Organisation.

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**Appendix 12/5: Traffic Signs – Traffic Signals**

- 1.11.6 All poles shall be numbered on the footway side at right angles to the traffic lantern brackets and immediately below the top cap; where all lantern fixings are allocated the numbering shall be placed below the bottom fixing bracket.
- 1.11.7 The areas of the pole on which the labels are to be impressed shall be cleaned/degreased before application.
- 1.11.8 The Company's proposed pole retention system shall be subject to the approval of the Overseeing Organisation. The retention system shall be of cast iron design and shall incorporate a pole locking system contained within an integral locking chamber. The design shall allow the pole to be aligned in any orientation with the cable installed, prior to the locking device being activated. The design shall not allow signal poles to rotate once fixed in position. Sockets shall be installed flush with the final surface. Flush sealing plugs shall be available for use when the signal pole is not present. The proposed system shall be adaptable to allow for a minimum insertion depth of 300 mm. The design of the pole retention system shall incorporate appropriate features to accommodate easy installation and replacement of signal poles and cables. The sockets and poles shall be installed in accordance with the manufacturer's instructions.
- 1.12 **Electrical Disconnection Equipment for Passively Safe Traffic Signal Poles**
- 1.12.1 The system must comply with BS EN12767 (Disconnection of Roadside Structures within 0.4ms of Impact).
- 1.12.2 The system shall be housed within a suitably sized cabinet to house all isolation equipment, such as circuit breakers and monitoring units. This cabinet will be located alongside the signal controller cabinet.
- 1.12.3 The system shall include a self-checking system, with an output to indicate system malfunction.
- 1.12.4 In normal operation the system must give a visual indication that it is operational, heartbeat or similar.
- 1.12.5 If the system is activated it must provide a positive visual indication of this and also indicate the location.
- 1.12.6 The isolation will be so designed that on impact all LV and ELV live and neutral circuit conductors are disconnected from the signal pole, together with any sensor voltages.
- 1.12.7 It must not be possible to re-energise a circuit that has been tripped.
- 1.12.8 The system will provide outputs to indicate a) Activation by impact, b) Activation by signal equipment fault, c) Isolation system malfunction and d) Isolation system power failure.
- 1.12.9 The isolation system must also be capable of isolating a whole signal pole due to a signal equipment fault; this facility is to be switchable by pole.
- 1.12.10 The sensors are to be mounted by the most appropriate means, ideally behind the base door if available. The location shall be agreed with the Overseeing Organisation before fitting.
- 1.12.11 The cabling to the sensors is to be run in separate ducts to LV cables, using orange PVC sheathed SWA 2 core 2.5mm cable, traffic signal loop feeder cable.
- 1.12.12 The sensor cable is to be terminated using a CET cable gland or equivalent, with the armouring being taken to Earth.
- 1.12.13 Sensors are to be IP64 rated for mounting in the structure. The sensor must provide a means of testing the system operation during commissioning and routine maintenance.

## Part 4: Specification

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**Appendix 12/5: Traffic Signs – Traffic Signals****1.13 Duct Systems**

- 1.13.1 Duct links between chambers and individual signal poles or equipment cabinets shall provide the appropriate number of ducts to accommodate the number of cables required to service the item. The layout shall be such that any tactile paving area is kept free of inspection chambers.
- 1.13.2 All duct work provided by the Company between Traffic Signal controllers and Traffic Signal poles or other equipment shall form a continuous route.
- 1.13.3 Traffic signal, communication, power and loop detector ducts and duct accessories shall comply with the latest version of BS EN 61386 - 24 and be orange in colour. All ducts, unless otherwise specified, shall be thick walled (5mm) high density polyethylene. The ducts shall be smooth walled (inner and outer) with a nominal internal diameter of 100mm unless otherwise stated and coloured orange with the words "Traffic Signals" printed in white along their length at intervals of not more than one metre. When laid, the wording shall be displayed uppermost. All lengths shall be jointed or sleeved. Spurs to signal poles shall generally be 100mm in diameter.
- 1.13.4 Telecommunication Service Provider's ducts and duct accessories shall comply with BS EN 61386 - 24 and be black in colour. Ducts shall comprise a high density polythene twin walled (inner wall smooth, outer wall corrugated) system with an internal diameter of 100mm and unit lengths of 6.0 metres. Every length shall be supplied with a push-fit coupler.
- 1.13.5 The Mechanical Properties of the ducts shall be that associated with "Normal Duty". For Resistance to Bending, both rigid and pliable ducts are acceptable provided that the ducting requirements of the particular installation are met and that the correct accessories are used. The category for Protection against Ingress shall be a minimum of IP 30 and the Resistance to Chemical Attack classification shall be "With Protection".
- 1.13.6 Yellow PVC marker tape, with the wording "CAUTION ELECTRICITY DUCT BELOW" printed along its full length so as to occupy not less than 75% of its available length and occurring at a minimum of 1.0 metre intervals, shall be laid 250mm above all duct-lines. The tape shall be a minimum of 150mm wide and 0.1mm thick.
- 1.13.7 Where normal cover to communication ducts for traffic signals cannot be obtained, e.g. on structures or due to underground obstructions such as concrete road foundation slabs, 32mm internal diameter galvanised steel pipes may be laid at shallow depth, with couplings and joints complying with the latest Version of BS 1387 Class H, all as directed by the Overseeing Organisation.
- 1.13.8 All service ducts shall be fitted with a draw rope in accordance with Clause 501.8. The rope shall extend at least 3.0 metres from each end of the duct and this length of rope shall be tidily looped and either tied to the draw rope of a parallel duct or secured to a marker block when no adjacent duct is available. In either case, unless ducts terminate at cabinets, mounting posts, columns or main duct chambers, their ends shall be marked with marker blocks or marker posts as detailed in HCD I1. Immediately after laying, ducts shall be sealed with removable split or solid plugs which can accommodate the specified draw rope.
- 1.13.9 A secondary draw cord shall be installed following any cable installation such that a serviceable cord is available at all times.

**1.14 Access Chambers**

- 1.14.1 Access chambers, installed in footpaths and verges, shall comprise proprietary high density polyethylene segmental chambers with pre-formed "knockout" duct accesses.

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**Appendix 12/5: Traffic Signs – Traffic Signals**

Chambers shall be twin walled, be capable of withstanding a 12.5 tonne wheel load and shall have a 150mm thick Class ST4 concrete surround. Chambers shall typically have a clear opening of 600 mm x 600 mm.

- 1.14.2 Chamber covers and frames shall comply with the requirements of BS EN 124:1994 and be Class B125 in footways and Class D400 in carriageways, hardshoulders and hard standings. Chamber covers for footways shall be manufactured from a high strength polyester composite material and shall be located in a 2.5mm thick galvanized steel frame which will allow height and tilt adjustment.
- 1.14.3 Chamber covers shall provide skid resistance greater than the minimum advisory limits.
- 1.14.4 Frames for chamber covers in footways shall be set in designation (i) cement mortar or a proprietary quick setting mortar of equivalent strength. The use of any quick setting mortar shall be subject to the approval of the Overseeing Organisation prior to use. Frames for chamber covers in the carriageway shall be set in epoxy mortar. All new, adjusted and replaced chamber frames and covers shall be set flush with the surrounding surface in hard landscaped, footway and carriageway areas. In soft verge chamber cover level shall be 25 mm above finished level. The finished thickness of the mortar bed to the frame shall be between 10 and 25 mm. Any additional adjustments beyond this shall be achieved by modifying the chamber structure or by using a frame of a suitable depth in accordance with Clause 507.18 of the Specification.
- 1.14.5 Horizontal and vertical alignment of the ducts shall be such that cables may be pulled directly through the chambers.
- 1.14.6 Ends of ducts shall protrude 25 mm through the inside of the chamber wall.
- 1.14.7 Chamber covers shall be clearly identified by the legend of the Overseeing Organisation such as "GCC-TS" or "SLC-TS" as appropriate. The lettering shall be 25 mm high and shall be embossed on each cover.
- 1.15 **Trench Reinstatements**
- 1.15.1 Reinstatements shall be made in accordance with the requirements of this document, Clause 706 of the Specification and those prescribed in the Highway Authorities and Utilities Committee (HAUC) "Specification for the Reinstatement of Openings in Highways" (ISBN 0 11 551143 1). Should there be any conflict then the requirements of this document shall take precedence.
- 1.15.2 The reinstatement method shall be an "All Permanent Reinstatement". The sub-base, base course and wearing course, or equivalent, shall be reinstated to a permanent standard at the first visit. In all cases the final surface of the reinstatement shall comply with the requirements given in Section S6.4.
- 1.16 **Cables and Routes**
- 1.16.1 All traffic signal and paired feeder cables shall conform to BS6346/87.
- 1.16.2 All traffic signal cables for LV and ELV will be orange PVC/SWA multi-core 1.5mm CSA cable.
- 1.16.3 All traffic signal paired feeder cable will be orange PVC/SWA 1.5mm CSA one or two pair cable.
- 1.16.4 Multi-core and paired feeder Cables should be armoured and the outer sheath colour Orange PVC in accordance with NJUG Volume 1.
- 1.16.5 Cable routes and core allocations for traffic signals and associated equipment to be carried out by the Company.



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**Appendix 12/5: Traffic Signs – Traffic Signals**

- 1.16.6 Cables shall not be jointed throughout their length from origin to destination.
- 1.16.7 Approximately one metre of spare length for each cable run shall be coiled at the main duct chamber adjacent to the controller, in addition in intermediate chambers addition spare shall be provided where capacity permits.
- 1.16.8 Cable cores/pairs shall be neatly routed within the cabinet and its connection frame and tie-wrapped in looms, with due regard to accessibility of maintainable items.
- 1.16.9 All Spare cores including ELV should not be connected to Earth until Earth Impedance Tests have been completed.
- 1.16.10 All cables shall be run in ducts.
- 1.16.11 Traffic Signal Cable must be separately ducted from Utility, Communication and other Services Cable.
- 1.16.12 Mains cable between the controller and ETP will be black in colour in accordance with NJUG Volume 1 and comprise 3 cores 6mm sq csa SWA cable
- 1.16.13 The mains cable must be installed through ducting running directly from the ETP to the controller and not via the controller access chamber.
- 1.16.14 Cabling between poles will not be acceptable unless prior agreement has been received from the Overseeing Organisation.
- 1.17 **Electrical Termination Pillar (ETP)**
- 1.17.1 The ETP shall house a double poled lockable fused isolator, fused appropriately which must comply with the latest edition of the IEE wiring regulations.
- 1.17.2 The base of the ETP shall be sealed with a layer of epoxy resin 6 mm thick which is to be laid on top of a sand base to prevent ingress of gas and moisture into the ETP.
- 1.17.3 The Company shall obtain approval of the proposed type of ETP from the Overseeing Organisation.
- 1.18 **Detection**
- 1.18.1 All slot cutting shall be designed and equipment installed to meet the latest version of MCH1540 - Specification for the Installation of Detector Loops on Motorways and All Purpose Trunk Roads, MCE0108 – Siting of Inductive Loops for Vehicle Detecting Equipment at Permanent Road Traffic Signals and TR 2512 – Performance Specification for Below Ground Detection Equipment.
- 1.18.2 MOVA Loops shall be designed and installed to meet the latest Version of MCH1542 – Installation of MOVA.
- 1.18.3 All loop tails shall be labelled in the nearest loop box to identify the loop identity which must relate the site specific approved drawings. The labels must be marked with a permanent marker.
- 1.18.4 All loop feeder cable joints to be re-usable to IP68 Cat 1.
- 1.18.5 All above ground detector units must be installed, configured and aligned in accordance with the manufactures instructions.
- 1.18.6 Above ground traffic detection will comply with the latest version of TR2505 – Performance Specification for Above Ground Vehicle Detector Systems for use at Permanent Traffic Signal Installations.

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**Appendix 12/5: Traffic Signs – Traffic Signals**

- 1.18.7 Kerbside Detectors will comply with the latest version of TR2507 – Performance Specification for Kerbside Detection Systems for Use with Nearside Signals and Demand Units.
- 1.18.8 On-Crossing Detectors will comply with the latest version of TR2506 - Performance Specification for Above Ground On-Crossing Pedestrian Detection System.
- 1.19 **Factory Acceptance Testing (FAT)**
- 1.19.1 The Company will be responsible for the factory acceptance testing of the controller(s) with a representative of the Traffic Signal Contractor, the Contracting Authority and the Overseeing Organisation.
- 1.19.2 The Company will give two weeks' notice prior to the FAT to all attendees.
- 1.19.3 The Company shall provide a testing schedule for approval of the Contracting Authority and Overseeing Organisation which shall cover all of the required testing to be undertaken during the FAT. This schedule will be generic and shall cover all modes of operation with a site specific schedule being developed if required.
- 1.20 **Electrical testing**
- 1.20.1 The Contracting Authority / Overseeing Organisation shall be given a minimum of seven days' notice before commencement of all electrical tests preceding final site commissioning. These tests shall be witnessed by the Contracting Authority / Overseeing Organisation at their discretion.
- 1.20.2 Electrical Testing is to be carried out by a Traffic Signal Contractor Engineer.
- 1.20.3 Earth Test Certificate to be provided before the Installation is Commissioned Electrical Testing to conform to BS7671 Requirements for electrical installations. IEE Wiring Regulations. Seventeenth edition.
- 1.20.4 The test certificate shall be handed to the Contracting Authority / Overseeing Organisation prior to the commencement of the final site acceptance.
- 1.20.5 Electrical Completion Certificate and Test Results are to be provided before the Installation is Commissioned – BS7671 Regulation 741-01-01. This record shall be handed to the Employer / Overseeing Organisation at the commencement of the final site acceptance.
- 1.20.6 The Company shall only arrange the final commissioning/acceptance of the site when the installation is complete.
- 1.20.7 The Company shall be responsible for all aspects of achieving a working installation operating to the satisfaction of the Contracting Authority / Overseeing Organisation.
- 1.21 **Completion of the Installation**
- 1.21.1 The Company should supply 2 copies all the Documentation including a copy for site prior to the Switch On to confirm that the Traffic Signal Site meets all statutory requirements.
- Controller Test Schedule;
  - Controller Specification;
  - MOVA dataset;
  - MOVA Specification;
  - Statutory Approvals and copies of letter of acceptance ;
  - Loop Test Schedule;

## Part 4: Specification

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**Appendix 12/5: Traffic Signs – Traffic Signals**

- Earth Test Certificate;
- Electrical Completion Certificate and Test Results To be provided before the Installation is Commissioned – BS7671 Regulation 741-01-01;
- As Installed Site Layout Diagram; and
- As built Cable layout / Schedules inclusive of Electrical Isolation cabinets.

## 1.21.2 Prior to final acceptance of the installation;

- (a) Where redundant traffic signal equipment still remains it must be removed and any old ducts abandoned. Any redundant duct runs must be blocked off at the duct end with expanding foam or similar to the approval of the Overseeing Organisation.
- (b) All redundant equipment shall be recycled or disposed of as per the Environmental Management Plan.

**1.22 Final Commissioning and Acceptance**

- 1.22.1 The Company will be responsible for organising the site acceptance testing of Controller(s) and the associated installation with a representative of the Traffic Signal Contractor, the Contracting Authority and the Overseeing Organisation.
- 1.22.2 The Company shall give the Contracting Authority / Overseeing Organisation two weeks' notice of switch on of any new traffic signal installation so that the Contracting Authority / Overseeing Organisation can complete its signal inspections and inform the Police and local representatives.
- 1.22.3 The Company shall liaise with the Contracting Authority / Overseeing Organisation with respect to agreeing the methodology for bringing the site into operation.
- 1.22.4 Completion Certificate will be furnished by the Company duly made out and briefly describing the completed Works. There will be sufficient space for the Contracting Authority / Overseeing Organisation comments and endorsements. A copy will be available to the Contracting Authority / Overseeing Organisation for their records immediately following completion.
- 1.22.5 Any minor defects and/or omission, which do not prevent the Installation from functioning in a safe and efficient manner, shall be recorded on the Completion Certificate.
- 1.22.6 The Company will ensure a Traffic Signal Engineer will be in attendance during switch on and final commissioning. The Traffic Signal Engineer will assist the Traffic Signal Installation team if any problems arise during switch-on.
- 1.22.7 The Company will provide a specialist MOVA Engineer to validate and commission the MOVA operation to the satisfaction of the Contracting Authority / Overseeing Organisation.
- 1.22.8 The Company shall give the Contracting Authority and Overseeing Organisation two weeks' notice of switch on of any new traffic signal installation so that the Contracting Authority / Overseeing Organisation can complete its signal inspections and inform the relevant organisations such as Police and local representatives.

**2 Temporary Traffic Signals**

- 2.1 The Company shall note the requirements of Appendix 1/17.

## Part 4: Specification

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**Appendix 12/5: Traffic Signs – Traffic Signals**

- 2.2 The use of Portable traffic signals used to control traffic shall comply with Department of Transport Specifications TR2502B Performance Specification for Portable Traffic Signal Control Equipment for Use at Road Works and TR 2405A Performance Specification for Vehicle Detection Equipment for Vehicle Actuated Portable Traffic Signals. In addition TR 2503B Performance Specification for Pedestrian Facilities at Temporary Stand Alone Traffic Signals shall comply where there is a requirement for pedestrians, the latest version of The Traffic Signs Regulations and General Directions, TAL 2/11 Portable Traffic Signals for the Control of Vehicular Traffic and TAL3/11 Signal Controlled Pedestrian Facilities at Portable Traffic Signals and Chapter 8 of the Traffic Signs Manual. Haul route crossings shall be in accordance with Chapter 8 of the Traffic Signs Manual.
- 2.3 The Company shall obtain the prior written consent of the Contracting Authority for multiphase temporary traffic signals.
- 2.4 The Company shall provide to the Contracting Authority a drawing to a scale of 1:500 with the position of the signals indicated by a dot and an arrow from the dot indicating the direction of the lights and a key to symbols used shall be shown. The position of signals shall be accurate to within 2 metres. The proposed stage arrangement, signal timings inclusive of all red periods together with location of the generator shall also be provided.
- 2.5 The Company shall consult and comply with the requirements of the emergency services (Fire, Ambulance and Police). Passenger transport operators shall also be informed if the Operations affect any of their routes.

**3 Controlled and Uncontrolled Crossings**

- 3.1 Replacement of surfaces of controlled and uncontrolled crossings shall match that already existing unless otherwise the subject of a traffic regulation order.

**4 General Safety**

- 4.1 Live cables may be present in the ducting system and at the pole tops and due care must therefore be taken at all times.
- 4.2 On new installations all primary, secondary signal heads shall be covered with an orange cover, approved by the Overseeing Organisation until the site is brought into service, to prevent any misunderstanding to the motorist.
- 4.3 On all new installations all Pedestrians push button panels or nearside demand units are to be covered with "Pedestrian Crossing Not In Use" sign approved by the Overseeing Organisation, until the site is brought into service.
- 4.4 Particular care to protect the work force and the general public shall be taken where duct chamber lids are removed and/or cables are being installed.
- 4.5 The attention of the Company is brought to the potential danger of gas build-up within duct and chamber systems.
- 4.6 Appropriate equipment and tools, including those recommended by the equipment manufacturer(s), shall be used.
- 4.7 Special care shall be taken to ensure the electrical integrity of any temporary works.

**5 Controlled Crossings**

- 5.1 As per section 1 above.

**6 Traffic Signal Assessments and Design**

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## Appendix 12/5: Traffic Signs – Traffic Signals

### 6.1 Traffic Signal Modelling

- 6.1.1 The Company shall develop Linsig models utilising the latest version of software for the operation and performance all of the proposed traffic signal junctions and signalised roundabouts to assess the Practical Reserve Capacity and queues / delay for individual links. The models shall be based on the Company's Design.
- 6.1.2 Linsig models shall include AM, PM and an interpeak periods, the results for each periods are to be issued to the Contracting Authority for approval prior to undertaking Paramics modelling in relation to Appendix F - Procedure for Demonstrating Compliance with the Junction Requirements and Junction Performance Indicators requirements & Appendix G – Contract Junction Compliance Traffic Models and Associated Instructions and Analysis Spreadsheet.

### 6.2 Traffic Signal Design

- 6.2.1 All Traffic Signal Designs shall be in compliance with the Scottish Government guidelines, Scotland Transport Cycling by Design 2010, The Design Manual for Roads and Bridges, Transport Scotland Disability Discrimination Act Good Practice Guide for Roads 2009, various National Standards and Advise. It is to be noted that some of standards and advice listed below have within them reference to superseded documents. It is the Designer's responsibility to verify and ensure that they are designing to the most current standards.
- 6.2.2 In addition, works shall be carried out in accordance with TA 84/06 Volume 8, Section 1, Part 2 Code of Practice for Traffic Control and Information Systems for All-Purpose Roads and following relevant publications and legislation shall include, but not be limited to the following:
- Construction (Design and Management) Regulations – 2007;
  - The Traffic Signs (Amendment) (No 2) Regulations and General Directions 2011;
  - The Zebra, Pelican and Puffin Pedestrian Crossing Regulations and General Directions 1997;
  - Design Manual for Roads and Bridges (DMRB);
  - Department for Transport (DfT) Specifications (TD);
  - Traffic Advisory Leaflets (TAL);
  - Local Transport Notes (LTN); and
  - Puffin Good Practice Guide.
- 6.2.3 The Company shall liaise with the Overseeing Organisations to establish whether or not local design criteria are relevant to the design process. The Company shall if applicable document local requirements and include them within the Design for approval.
- 6.2.4 All Designs shall have a stage 1, 2, 3 and 4 Road Safety Audit (stages 1 and 2 can be combined for smaller installations). No works may commence until all items raised by the stage 2 safety audit have been addressed or a viable exception approved.
- 6.2.5 The Company shall provide the Contracting Authority and Overseeing Organisation with traffic signal detailed design drawings, standard details, controller TR2500 forms and MOVA Datasets for all proposed installations.

**Appendix 12/5: Traffic Signs – Traffic Signals**

6.2.6 Drawings shall be provided as follows inclusive of Key and Notes:

- (i) General Arrangement – to include but not limited to
  - Scale 1:500;
  - Stage Arrangement;
  - Road Markings;
  - Cable Diagram to include Controller, Auxiliary cabinets, link cables for MOVA linking and RS232 communication cables as applicable and detection;
  - MOVA Loop Dimensions Schedule;
  - Passive Pole Rating Schedule;
  - Pole Numbers;
  - Loop References;
  - Chamber References;
  - Cabinet References;
  - Tactile paving;
  - Advanced Cycle Stop Lines, if applicable;
  - Detection;
  - Traffic Signal Controller and Auxiliary Cabinets;
  - Traffic Signal Poles; and
  - Retention Sockets.
- (ii) Traffic Signal Layout – to include but not limited to
  - Scale 1:200;
  - Stage Arrangement; and
  - Road Markings.
  - Cable Diagram to include Controller, Auxiliary cabinets, link cables for MOVA linking and RS232 communication cables as applicable and detection
  - Traffic Signal Equipment
  - Passive Pole Rating Schedule.
- (iii) Traffic Signal Ducting, Chambers and Detection Loops - to include but not limited to
  - Scale 1:200;
  - All Chambers including Reference;
  - Carriageway Loop Boxes including Reference;
  - Ducting;
  - Retention Sockets;
  - Road Markings;

**Appendix 12/5: Traffic Signs – Traffic Signals**

- Loops including Reference; and
  - Controller.
- (iv) Road Markings
- Scale 1:500;
  - Road Markings ;
  - Permanent Traffic Signs required as part of the Traffic Signal Installation; and
  - Temporary Traffic Signs require as part of the Traffic Signal Installation.
- 6.2.7 In addition to the above, the Company shall provide details of special road surfacing, such as high friction road surfacing, proposed on approaches to stoplines and within controlled crossing areas.
- 6.2.8 All of the above drawings and documents shall be issued to the Contracting Authority and Overseeing Organisation for approval. No works are to commence until traffic signal approval has been obtained.
- 6.2.9 A safety case, including risk assessment/hazard checklists, shall be submitted for each design/site. The safety case shall include any departure from standards & specifications or use of non-prescribed traffic signs/ road markings and appropriate approvals shall be in place for the same. It shall also include any CDM, Environmental and DDA related departures and risks. This shall be in addition to the independent Road Safety Audit, DDA audits and Independent Audit Review.

## Part 4: Specification

## Appendix 30/1: Landscaping General

| Action Number | Sub-Clause Reference | Specification Amendment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1             | 3001.2               | <p>The Company shall give the Contracting Authority at least 48 hours' notice of all items in sub-clause 3001.2 as well as for works in or adjacent to the following specific sites of nature conservation or archaeological interest.</p> <ul style="list-style-type: none"> <li>(i) All water courses;</li> <li>(ii) All Scheduled Ancient Monuments and other sites of archaeological interest including site identified during the archaeological watching brief;</li> <li>(iii) Natura Sites including Special Protection Areas and Special Areas of Conservation; Sites of Special Scientific Interest; and</li> <li>(iv) Sites with protected species or otherwise designated for their nature conservation interest.</li> </ul> <p>The Company shall liaise directly with landowners to give notice and arrange precise access dates for works outwith the road boundary.</p> <p>The Company shall give the Contracting Authority at least 48 hours' notice of the intention to commence clearance of trees, scrub, shrubs and hedgerows which may provide habitat for nesting birds.</p> |
| 2             | 3001.13              | <p>Pesticides records forms in accordance with the template attached, detailing information as required in sub-clause 3001.12, shall be submitted to the Contracting Authority on a monthly basis.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 3             | 3001.14              | <p>The bird nesting period for this Agreement shall be from March to August inclusive, unless otherwise agreed in writing with SNH.</p> <p>If SNH require protection during the breeding season of specific birds, the Company shall programme the Works so that disturbance to the habitat of those birds is as low as reasonably possible during the period required by SNH.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 4             | 3001.15              | <p>Inspection records shall be prepared in accordance with the template attached and included as an appendix to Inspection Reports prepared by the Company's landscape architect. be submitted to the Contracting Authority at the following intervals:</p> <ul style="list-style-type: none"> <li>(a) In the case of activities carried out under Clause 3007 and 3010 once per year.</li> <li>(b) In the case of activities carried out under Clause 3009: <ul style="list-style-type: none"> <li>(i) Six times per year in the first year of the Establishment Period;</li> <li>(ii) Four times per year in the second year of the Establishment Period; and</li> <li>(iii) Three times per year for the remainder of the Establishment Period.</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                         |



**Appendix 30/1: Landscaping General**

|                                                              |                       |                                |
|--------------------------------------------------------------|-----------------------|--------------------------------|
| <b>LANDSCAPE WORKS - PESTICIDES RECORD</b>                   |                       |                                |
| Date of visit./ ./ .. (minimum one record / day)             |                       |                                |
| Contract Name:                                               |                       |                                |
| Name of Company:                                             |                       | Company's telephone no:        |
| Weather Conditions:                                          |                       |                                |
| <b>Operations carried out</b>                                | <b>Pesticide used</b> | <b>Locations of Operations</b> |
| Total weed control                                           |                       |                                |
| Weed control in any waterbody                                |                       |                                |
| Selective herbicide to areas of grass                        |                       |                                |
| Herbicide to cultivated plant beds                           |                       |                                |
| Total herbicide around individual plants in grass            |                       |                                |
| Other (state purpose)                                        |                       |                                |
| Names of operatives on site:                                 |                       |                                |
| Qualifications of operatives named:                          |                       |                                |
| Supervisor .....                                             |                       |                                |
| Storeman .....                                               |                       |                                |
| Application by .....                                         |                       |                                |
| Signed (for Company) .....                                   |                       |                                |
| Company's observations on damage by others or any incidents: |                       |                                |
| .....                                                        |                       |                                |
| .....                                                        |                       |                                |
| .....                                                        |                       |                                |
| .....                                                        |                       |                                |
| .....                                                        |                       |                                |
| .....                                                        |                       |                                |

**Appendix 30/1: Landscaping General**

**Appendix 30/1: Landscaping General**

|                                                                                                                            |                                |
|----------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| <b>LANDSCAPE WORKS - INSPECTION RECORD</b>                                                                                 |                                |
| Date of visit: ../ ../ .. (minimum one record / day)                                                                       |                                |
| Name of Company/Contractor:<br>Company/Contractor's telephone no:                                                          |                                |
| <b>Operations carried out</b>                                                                                              | <b>Locations of Operations</b> |
|                                                                                                                            |                                |
|                                                                                                                            |                                |
|                                                                                                                            |                                |
|                                                                                                                            |                                |
|                                                                                                                            |                                |
| <b>Names of operatives on site:</b><br>.....<br>.....                                                                      |                                |
| Company observations on damage by others, additional work required or general condition of the works:<br>.....             |                                |
| This maintenance visit has been satisfactorily completed.<br>SIGNED (for Company) .....<br>NAME: .....<br>DATE: ../ ../ .. |                                |

## Part 4: Specification

## Appendix 30/2: Weed Control

| Action Number | Sub-Clause | Specification Amendment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1             | 3002.1     | <p>Weed control for all injurious weed species, including those listed in sub-Clause 3002.1 with the addition of Oil Seed Rape, Rosebay Willowherb and Marestail, shall be carried out throughout the New Works until the end of the Establishment Period at sufficient frequency to restrict their growth and prevent their spread.</p> <p>In locations where effective weed control shall be possible and practicable by other means allowed within this Agreement there shall be a presumption against the use of chemical herbicides.</p>                                            |
| 2             | 3002.3     | <p>Total weed control shall apply to the following locations:</p> <ul style="list-style-type: none"> <li>(i) Bases of road restraint systems;</li> <li>(ii) Around structures, columns, posts and signs;</li> <li>(iii) All paved areas, kerbs, hardstandings, filter drains and gravel areas (including but not limited to gravelled central reservations); and</li> <li>(iv) As otherwise instructed.</li> </ul> <p>The Company shall apply herbicides at sufficient frequency to eliminate weed growth throughout the New Works Period until the end of the Establishment Period.</p> |
| 3             | 3002.4     | <p>Total weed control by non-residual herbicide shall apply to the following locations:</p> <ul style="list-style-type: none"> <li>(i) All areas to be seeded and all planting beds prior to seeding or planting so as to be in a weed free condition;</li> <li>(ii) All stockpiles of topsoil which shall be maintained in a weed free condition;</li> <li>(iii) All planted beds; and</li> <li>(iv) As otherwise instructed.</li> </ul>                                                                                                                                                |
| 4             | 3002.5     | <p>A translocated herbicide approved by the Scottish Environment Protection Agency (SEPA) or their successors for use in or near water shall be used for weed control in all open ditches, lagoons, watercourses and filter drains. Control shall be at sufficient frequency to eliminate weed growth throughout the New Works until the end of the Establishment Period.</p>                                                                                                                                                                                                            |
| 5             | 3002.6     | <p>Selective weed control using translocated herbicide shall be applied in all non-hardened verges, central reserves, planted areas and other grassed areas as and when necessary to restrict growth and prevent the spread of broadleaf weed species.</p>                                                                                                                                                                                                                                                                                                                               |

## Part 4: Specification

## Appendix 30/2: Weed Control

| Action Number. | Sub-Clause | Specification Amendment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6              | 3002.7     | <p>Where weed control shall be by spot application translocated herbicide shall be applied as necessary to control weed species listed in Sub Clause 3002.1, and in any case no less than twice a year during periods of active growth throughout the New Works until the end of the Establishment Period at the following locations:</p> <ul style="list-style-type: none"> <li>(i) For control of injurious weeds in grass and wildflower areas;</li> <li>(ii) All woodland and planted areas;</li> <li>(iii) All hedgerow planting areas; and</li> <li>(iv) As otherwise instructed.</li> </ul> <p>Spot treatment shall typically be via controlled droplet application of a type appropriate to the herbicide, the species being treated and the location.</p> |
| 7              | 3002.8     | <p>Weed control by hand weeding shall be carried out as necessary, and in any case no less than twice a year throughout the New Works until the end of the Establishment Period at the following locations:</p> <ul style="list-style-type: none"> <li>(i) All woodland and other planting areas where spot application may cause damage;</li> <li>(ii) Hedgerow planting where spot application may cause damage;</li> <li>(iii) Wildflower areas and areas densely populated with desirable broadleaf species where spot application may cause damage;</li> <li>(iv) Within plant protectors and tree/shrub shelters;</li> <li>(v) Around planting stations in existing woodland; and</li> <li>(vi) As otherwise instructed.</li> </ul>                          |
| 8              | 3002.9     | <p>Weed control by cutting shall be carried out as necessary in areas where the extent of growth or type of weed is not effectively controlled by herbicide application or hand weeding.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 9              | 3002.10    | <p>The Company shall remove all arisings in accordance with sub-clause 3002.10 from weed control operations that involve hand weeding and cutting.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

## Part 4: Specification

**Appendix 30/3: Control of Rabbits and Deer**

| <b>Action Number</b> | <b>Sub-Clause</b> | <b>Specification Amendment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                    | 3003.1            | The Company shall carry out rabbit, hare and deer control in all planting and seeding areas as necessary to ensure successful establishment for the duration of the New Works until the end of the Establishment Period. The Company shall only cut areas of brambles and herbage that shall interfere with the control of rabbits and deer. The arisings shall be used to form habitat piles in locations where they are unlikely to become visual intrusive or interfere with access or maintenance. No clearance of brambles or herbage shall be undertaken during the bird nesting season. |
| 2                    | 3003.8            | The Company shall ensure effective rabbit control for the duration of the New Works and until the end of the Establishment Period and shall be responsible for contacting adjacent landowners regarding their obligation to control infestations on their own land.                                                                                                                                                                                                                                                                                                                            |
| 3                    | 3003.9            | The Contracting Authority shall request an inspection of the site with a representative of the Company at monthly intervals to ensure effective control has been achieved.                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 4                    | 3003.12           | The Company shall keep planting enclosures free of rabbits, rabbit burrows including exit/entry holes and deer until such time that planting has become fully established and is of sufficient size and maturity so as to be no longer vulnerable to significant damage but not earlier than the end of the Establishment Period.                                                                                                                                                                                                                                                              |
| 5                    | 3003.14           | The Company shall replace damaged plants annually (towards the end of the planting season) and maintain them for the duration of the New Works including the Establishment Period.                                                                                                                                                                                                                                                                                                                                                                                                             |

## Part 4: Specification

## Appendix 30/4: Ground Preparation

| Action Number | Sub-Clause | Specification Amendment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1             | 3004.1     | Within areas of proposed planting or seeding, all existing grass and herbaceous vegetation shall be cut, in accordance with sub-clause 3004.1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 2             | 3004.2     | <p>All areas which shall be planted shall be treated with translocated herbicide between 21 and 25 days prior to planting in accordance with sub-clause 3002.4, with the exception of areas to be planted in existing woodland, rock cuttings, areas to be planted in inverted turfs and within areas of undisturbed ground.</p> <p>At feathered and extra heavy standard tree planting stations all existing grass and herbaceous vegetation shall be cut to the full extent of the area required to be excavated for planting pits prior to excavation of the pits.</p> <p>On the Balmedie-Tipperty section, translocated herbicide is only to be used in areas where the extent of existing vegetation is sufficient to impede the establishment of the new planting.</p> |
| 3             | 3004.5     | <p>Subsoil in planting areas, excluding areas which shall be planted in inverted turfs within areas of undisturbed ground, shall be ripped to a minimum depth of 450 millimetres prior to spreading of topsoil.</p> <p>Areas in existing arable or pasture land which shall be planted shall be ripped to a minimum depth of 600 millimetres to ensure the breaking up of any subsoil compaction.</p>                                                                                                                                                                                                                                                                                                                                                                        |
| 4             | 3004.6     | Spacing between the tine furrows shall be in accordance with sub-clause 3004.6.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 5             | 3004.7     | The requirements of sub-clauses 3004.8 - 3004.11 shall apply to all subsoil to be seeded or topsoil spread under the Agreement except where otherwise stated in Appendix 30/4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## Part 4: Specification

## Appendix 30/4: Ground Preparation

| Action Number | Sub-Clause | Specification Amendment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6             | 3004.8     | <p>All undesirable material brought to the surface including, but not limited to, stones, roots, tufts of grass and foreign matter larger than the sizes specified below shall be removed off Site unless otherwise agreed with the Contracting Authority.</p> <p>The size of the stones / debris which shall be removed relates to the proposed vegetation type. The maximum stone / debris size permitted for each, is as follows :</p> <ul style="list-style-type: none"> <li>(i) Grass verges and visibility splays: 25 millimetre protruding stone after topsoil has been firmed / rolled;</li> <li>(ii) All other grassland and wildflower grassland: 75 millimetre;</li> <li>(iii) Planted areas except amenity / ornamental shrub planting: 100 millimetre; and</li> <li>(iv) Amenity / ornamental shrub planting: 75 millimetres.</li> </ul> <p>The above stone removal shall apply to the full depth of topsoil required for the proposed vegetation cover.</p> <p>The overall stone content by percentage volume shall not be greater than that of the adjacent soils.</p> <p>Stones brought to the surface during final preparation of soils shall be retained on site and used to form habitat piles in locations that are not visually intrusive and shall not interfere with access or the maintenance of the New Works Site. All non-organic foreign matter shall be removed off site.</p> |



## Part 4: Specification

**Appendix 30/5: Grass Seeding, Wildflower Seeding and Turfing**

| Action Number | Sub-Clause | Specification Amendment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1             | 3005.1     | Grass seed shall be sown as per sub-clause 3005.1. Wildflower seed shall be sown in early spring or autumn at the same time as grass unless otherwise recommended by the supplier.                                                                                                                                                                                                                                                                                                                                            |
| 2             | 3005.2     | All areas to be seeded or turfed shall be cultivated as per sub-clause 3005.2, with the exception of rock faces. A 250 millimetre radius shall be left clear of seeding around each new tree and shrub.                                                                                                                                                                                                                                                                                                                       |
| 3             | 3005.3     | <p>All areas to be seeded with general purpose grass and productive grass shall have fertiliser and or other soil ameliorants incorporated into the upper 50 millimetre of soil at a rate(s) considered necessary for successful establishment. The rate of application and composition of fertilizer and other ameliorants shall be based upon the topsoil test results. (as per Appendix 1/5)</p> <p>No fertiliser or soil ameliorants shall be applied to areas to be seeded with wildflower (species rich) grassland.</p> |

## Part 4: Specification

## Appendix 30/5: Grass Seeding, Wildflower Seeding and Turfing

| Action Number | Sub-Clause      | Specification Amendment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4             | 3005.4          | <p>Grass seed mixes shall be approved by the Contracting Authority and shall be as follows;</p> <ul style="list-style-type: none"> <li>(i) A general purpose grass seed mix shall be used in road verges, embankments and cuttings not planted or where other grassland is required. The seed mix(s) shall provide a rapidly establishing sward to provide an appearance and habitat which reflects adjacent and surrounding grassland communities. The mix(s) shall reflect the diversity of grassland communities along the route as described in the Environmental Assessment Documents;</li> <li>(ii) Wildflower (species rich) grassland shall be flora and grassland of very low fertility created to enhance the amenity and nature conservation value of the road corridor. The proposed mix(s) shall match the adjacent and surrounding grassland communities of greatest nature conservation value. Short growing grasslands of low fertility in which the growth of wild flowers shall be encouraged. For wildflower grassland mixes the ratio of grass seed to wildflowers shall be 80%:20% respectively. No single species of wildflower shall be less than 10% by number of the wildflower component with the exception of Oxeye Daisy (<i>Leucanthemum vulgare</i>) which, if specified, shall be limited to not more than 3% of the wildflower component.;</li> <li>(iii) Productive grassland shall be sown where grassland is potentially to be returned to agricultural use for pasture. The Company shall consult with the Contracting Authority with regard to species mixes and sowing density on land to be returned to pasture;</li> <li>(iv) Areas to be potentially returned to arable use shall be seeded with nitrogen fixing species. The Company shall consult with the Contracting Authority with regard to species mixes and sowing density on land to potentially be returned to arable use;</li> <li>(v) All new woodland and native scrub planting areas shall be seeded with a low-maintenance grass mix capable of suppressing weed growth in planting areas until a full canopy of trees and shrubs has developed.</li> </ul> |
|               |                 | <p>Consideration shall be given to use of grass and wildflower species which are unpalatable to deer where there is a risk that deer will be attracted to areas close to the scheme roads.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5             | Inserted Clause | <p>All seed shall be delivered to the Site in bags sealed by the supplier. A label shall be attached to each bag giving details of species and percentage breakdown. The same details shall be enclosed within each bag. Each bag shall be numbered uniquely and relate to the label and documents within the bag. The documents shall be submitted to the Contracting Authority prior to sowing.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## Part 4: Specification

## Appendix 30/5: Grass Seeding, Wildflower Seeding and Turfing

| Action Number | Sub-Clause | Specification Amendment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6             | 3005.7     | <p>Wildflower mixes shall be of UK native origin selected and procured in accordance with Appendix 1 of 'Cost Effective Landscape: Learning from Nature'</p> <p>The Company shall complete and submit to the Contracting Authority a wildflower seed Provenance Certificate in accordance with the Certification Procedure.</p> <p>Wildflower seed mixes shall contain only species occurring in the National Vegetation Classification category appropriate to the location.</p> <p>Local provenance seed shall be supplied by either harvesting from the approved sites or from nursery propagation to the approval of Scottish Natural Heritage. If nursery propagated seed is used the Company shall allow sufficient time in their programme to ensure that the seed is available when required for sowing.</p> <p>All wildflower seed shall be tested by an independent organisation such as the Scottish Agricultural Science Agency (SASA) to verify purity of seed (percentage of seed / inert material), species composition, and percentage germination. The test certificates shall be made available to the Contracting Authority for consent prior to sowing.</p> <p>The wildflower seed mixes shall contain a minimum percentage of:</p> <ul style="list-style-type: none"> <li>i) 95% pure seed, not inert material (% by weight); and</li> <li>ii) a percentage of flora rather than grass seed species which matches the percentage of flora species in the surrounding plant communities of greatest nature conservation value.</li> </ul> <p>Seeds within the wildflower seed mixes shall have a minimum germination rate of 80%.</p> |
| 7             | 3005.8     | <p>Sowing of seed shall be carried out at the rate specified below or in accordance with the supplier's recommendations if different:</p> <p>General purpose grass seed shall be sown at a rate of not less than 20g/m<sup>2</sup> for verges and side slopes of cuttings and embankments and 15g/m<sup>2</sup> elsewhere.</p> <p>Wildflower grassland areas shall be sown at a rate of not less than 5g/m<sup>2</sup></p> <p>Grass seed for land to be returned to agricultural use: 25g/m<sup>2</sup></p> <p>The sowing of seed shall be carried out as soon as practicable in order to benefit soils stabilisation.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

## Part 4: Specification

**Appendix 30/5: Grass Seeding, Wildflower Seeding and Turfing**

| Action Number | Sub-Clause | Specification Amendment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8             | 3005.10    | <p>Hydraulic seeding shall be applied only to weathered rock cuttings and other areas which, with the agreement of the Contracting Authority, cannot be practicably broadcast seeded by hand or mechanical means. The seed mix for hydraulic seeding of rock cuttings shall be Species Rich Grass and in other areas as shown on the drawings.</p> <p>The rate of application of grass seed for hydraulic seeding shall be the same as for hand or broadcast seeding unless otherwise agreed with the Contracting Authority. The other ingredients in the hydraulic mixture shall be as recommended by the specialist hydroseeding sub-contractor and agreed with the Contracting Authority.</p> |
| 9             | 3005.14    | Any turf imported shall comply with sub-clause 3005.14 and shall contain a grass and/or herb mixture which reflects adjacent and surrounding grassland communities.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 10            | 3005.25    | Turf on slopes greater than 1 in 4 shall be secured using either galvanised wire pins or softwood pegs as per sub-clause 3005.25.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 11            | 3005.26    | Newly laid turf laid shall be watered as per sub-clause 3005.26.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 12            | 3005.29    | <p>A minimum of two establishment cuts shall be undertaken for general purpose and productive grass; with further cuts undertaken as necessary to achieve coverage as stated in sub-clause 3005.11 and one cut subsequent to the required sward coverage being achieved.</p> <p>There shall be no establishment cut for wildflower (species rich) grassland.</p>                                                                                                                                                                                                                                                                                                                                 |
| 13            | 3005.30    | <p>All general purpose grass areas shall be left clear of grass clippings following each mowing by raking or other suitable method except where grass height is less than 200mm at the time of cutting in which case grass cuttings may be left in situ.</p> <p>Clippings shall not be removed from wildflower (species rich) grassland following cutting.</p>                                                                                                                                                                                                                                                                                                                                   |

## Part 4: Specification

## Appendix 30/6: Planting

| Action Number | Sub-Clause | Specification Amendment                                                                                                                                                                                                |
|---------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1             | 3006.3     | Plant stock and sizes shall be as Tables 30/6.1, 30/6.2, 30/6.3 and 30/6.4. Species, varieties and plant spacings shall be in accordance with the New Works Requirements and the Indicative Landscape Design drawings. |

Table 30/6.1 Specimen Trees

| Type                       | Girth at 1 metre Above Ground Level<br>(centimetres) | Clear Stems from Ground Level<br>(metres ) | Minimum Height from Ground Level<br>(metres) | Maximum Height from Ground Level<br>(metres) |
|----------------------------|------------------------------------------------------|--------------------------------------------|----------------------------------------------|----------------------------------------------|
| Extra heavy standard       | 14-20                                                | 1.8                                        | 4.25                                         | 6.0                                          |
| Heavy standard             | 12-14                                                | 1.8                                        | 3.5                                          | 4.25                                         |
| Standard                   | 8-10                                                 | 1.75                                       | 2.5                                          | 3.0                                          |
| Large rootballed specimens | -                                                    | -                                          | 1.5                                          | 1.75                                         |
| Large conifers rootballed  | -                                                    | -                                          | 1.5                                          | 1.75                                         |

Table 30/6.2 Trees - Feathered, Transplants and Container Grown Stock

| Type                                              | Minimum Age | Minimum Height Above Ground Level                                                        | Minimum Container Size |
|---------------------------------------------------|-------------|------------------------------------------------------------------------------------------|------------------------|
| Transplants whips<br>(broadleaves only)           | 2+1 years   | 450 millimetres                                                                          | -                      |
| Transplant in tree shelters<br>(broadleaves only) | 1+1 years   | 400 millimetres                                                                          | -                      |
| Container grown evergreens                        | 2+1 years   | 600 millimetres<br>Holly to be cut back to 200 millimetres immediately prior to delivery | 2 litres               |
| Feathered Trees                                   | as B.S.     | 1.5-2.5 metres                                                                           | -                      |

Table 30/6.3: Cell Grown Stock

| Type     | Approximate Height (millimetres) | Minimum Cell Volume (ml) | Minimum Root Collar Diameter (millimetres) |
|----------|----------------------------------|--------------------------|--------------------------------------------|
| Conifers | 200-400                          | 150                      | 5                                          |
|          | 200-400                          | 350                      | 8                                          |

## Part 4: Specification

**Appendix 30/6: Planting**

| Type        | Approximate Height (millimetres) | Minimum Cell Volume (ml) | Minimum Root Collar Diameter (millimetres) |
|-------------|----------------------------------|--------------------------|--------------------------------------------|
| Broadleaves | 400-600                          | 150                      | 6                                          |
|             | 400-750                          | 350                      | 8                                          |
| Holly       | 200-400                          | 150                      | 7                                          |
| Shrubs      | 200-400                          | 150                      | 5                                          |

At least 25% of plants shall be supplied in the larger size range. Plants in 350ml cells shall not be more than 3 years old. All other plants shall not be more than 2 years old.

**Table 30/6.4 Shrubs, Conifers, Hedge Plants, Climbers and Ground Cover Plants**

| Type                                | Minimum Age | Column A Acceptable Height | Column B Minimum Height for Small/Slow Growing Plants not Readily Available to Sizes Shown in Column A |
|-------------------------------------|-------------|----------------------------|--------------------------------------------------------------------------------------------------------|
| Bare root/Hedge plants              | 2+1 years   | 400-600 millimetres        | -                                                                                                      |
| Transplants                         | 1+1 years   | 400-600 millimetres        | -                                                                                                      |
| Container grown shrubs and conifers | 2+1 years   | 450-600 millimetres        | 300-450 millimetres                                                                                    |
| Container grown climbers            | 3 years     | 600-900 millimetres        | 400-600 millimetres                                                                                    |
| Ground cover plants                 | 3 years     | 300-450 millimetres        | 150-200 millimetres                                                                                    |
| Rooted Cuttings                     | 2 years     | 400-600 millimetres        |                                                                                                        |

## Part 4: Specification

## Appendix 30/6: Planting

| Action Number | Sub-Clause         | Specification Amendment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2             | 3006.6             | The Company shall provide written confirmation that United Kingdom native plant species have been sourced from the highest available preference for selecting plant material contained within Appendix 1 of 'Cost Effective Landscape: Learning from Nature' prior to commencement of planting Works. The Company shall submit Provenance Certificates in accordance with the Certification Procedure accompanied by certification from the supplying nurseries in respect of the provenance of plant material in accordance with the Certification Procedure. Where there is a choice of form or size of plant material, the most local provenance shall be selected. |
| 3             | 3006.12            | Topsoil for backfilling of tree pits may be site won where it is of suitable quality for successful establishment of the newly planted trees.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 4             | 3006.13            | Slow release fertilizer shall be incorporated into the soil as sub-clause 3006.15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5             | 3006.14            | Compost pH, conductivity and nutrient composition shall be decided in compliance with the Company's Quality Plan and associated method statements based on the results of topsoil tests.                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 6             | 3006.15            | <p>Slow release fertiliser shall be incorporated into backfill, into the top 75 millimetres of planting bed soil, at the following standard rates using the fertiliser specified unless the results of the soil tests indicate otherwise.</p> <p>Slow release fertilizer with a Nitrogen: Potassium: Phosphorus: Magnesium ratio of 14:8:13:2 shall be incorporated into the backfill of tree pits/planting areas as follows:</p> <ul style="list-style-type: none"> <li>(i) Standard trees: 20g;</li> <li>(ii) Heavy Standard trees: 40g;</li> <li>(iii) Extra Heavy Standard trees 100g; and</li> <li>(iv) Woodland planting beds 50g per square metre.</li> </ul>   |
| 7             | 3006.16            | <p>Root dips shall be applied to all bare root plants and anti-desiccant sprays shall be applied to all conifers at the following times:</p> <ul style="list-style-type: none"> <li>i) At the time of lifting from the nursery;</li> <li>ii) On arrival at site; and</li> <li>iii) Immediately prior to planting.</li> </ul>                                                                                                                                                                                                                                                                                                                                           |
| 8             | Addition al Clause | All plants shall be dipped in a solution of, or dusted with powder of, mycorrhizal fungi appropriate to the plant species at a rate in accordance with the fungi supplier, immediately prior to planting                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 9             | 3006.17            | All bare rooted, rootballed and cell grown stock shall be planted whilst the plants are dormant between the beginning of November and the end of March. All evergreen species shall be planted in either March or November.                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 10            | 3006.23            | Bare root whips, transplants and cell grown plants may be notch planted into areas of cultivated or existing topsoil of minimum 300 millimetres depth in accordance with methods (i) of sub-clause 3006.23 unless planting is into inverted turves, when method (ii) shall be used.                                                                                                                                                                                                                                                                                                                                                                                    |

## Part 4: Specification

**Appendix 30/6: Planting**

|    |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| 11 | 3006.24 | <p>Pits for whips, transplants and shrubs shall be dug in accordance with sub-clause 3006.24 in locations where topsoil depths are less than 300 millimetres. All container grown plants shall be pit planted. Trenches for hedges shall be dug in locations where there is less than 300 millimetres depth of topsoil.</p> <p>Arisings from planting pits and trenches shall be retained on the New Works Site and deposited within proposed landscape earthworks.</p>                                                                                                                                |
| 12 | 3006.28 | Hedge trenches excavated in accordance with Table 30/1 shall be backfilled with a mixture of 80% topsoil and 20% compost with slow release fertiliser added as required to make up for any nutrient deficiencies identified in the soil test results.                                                                                                                                                                                                                                                                                                                                                  |
| 13 | 3006.29 | <p>All planting areas with spread or existing topsoil shall be cultivated in compliance with sub-clause 3006.29 prior to planting.</p> <p>Slow release fertiliser shall be scattered over the soil in compliance with Sub-Clause 3006.15</p>                                                                                                                                                                                                                                                                                                                                                           |
| 14 | 3006.30 | A 600mm wide strip along all hedgelines except those that have been backfilled shall be cultivated in accordance with sub-clause 3006.30.                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 15 | 3006.33 | The soil shall be watered to field capacity immediately after planting if there is a risk to plants of water stress or wilting.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 17 | 3006.38 | Root barriers shall be required where the clearances required for underground services and drainage infrastructure or the integrity of structures would otherwise be adversely affected by plant roots or where required by the Relevant Authorities.                                                                                                                                                                                                                                                                                                                                                  |
| 18 | 3006.41 | The minimum length of tree stakes for heavy standard and extra heavy standard trees shall be 2 m and the minimum width 75 millimetres. Tree stake sizes for other tree forms shall be in accordance with sub-Clause 3006.41.                                                                                                                                                                                                                                                                                                                                                                           |
| 19 | 3006.42 | Where planting on a slope stakes may be driven at an angle mid-way between the slope and the vertical tree stem.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 20 | 3006.43 | Heavy and extra heavy standard trees shall be double staked. Stakes shall be a minimum of 2 m in length and 75 mm in diameter and shall be driven vertically into the pit to a depth of not less than 500 mm below the bottom of the pit. Stakes shall not pass through the rootball.                                                                                                                                                                                                                                                                                                                  |
| 21 | 3006.44 | Extra heavy standards with double staking shall be secured centrally between the stakes with one set of supporting bands of fire hose or equivalent webbing of minimum width 70 millimetres positioned with the upper edge of the uppermost webbing band at 700 mm above ground level and 50 mm below the tops of the stakes which shall be driven or trimmed to 650 mm above ground level. Each band shall be looped around the tree stem and nailed to the stake using at least two 25 mm galvanised clout nails and shall be equally tensioned so as to hold the tree centrally between the stakes. |
| 22 | 3006.45 | Semi-mature trees shall be planted as shown on Drawing Number K5 to Volume 3 of the MCHW in compliance with the Company's Quality Plan and associated method statements and consented to by the Contracting Authority.                                                                                                                                                                                                                                                                                                                                                                                 |



## Part 4: Specification

## Appendix 30/6: Planting

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| 23 | 3006.49                  | All extra heavy standard, heavy standard and standard trees shall be watered to field capacity immediately following planting. All other tree and shrub plants shall be watered to field capacity immediately after planting if there is a risk to plants of water stress or wilting.                                                                                                                                                                                                                                                  |
| 24 | Addition<br>al<br>Clause | All container grown, cell grown and root balled plants shall be watered to field capacity immediately before planting.                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 25 | 3006.52                  | Plant protectors shall be provided for all two year old transplants, cell grown plants, shrubs and conifers.<br><br>(i) Tree shelters shall be a minimum of 750 millimetres height and 80-120 millimetres diameter. Shrub shelters shall be a minimum of 750 millimetres height and 100-150 millimetres diameter;<br><br>(ii) Where the species shall be Fagus, base ventilation shall be provided; and<br><br>(iii) Shelters shall be installed with timber stakes and adjustable ties according to the manufacturer's specification. |
| 26 | 3006.66                  | Bulbs shall be planted at the following rates per square metre:<br><br>Bluebell 150 Nr;<br>Crocus 100 Nr;<br>Tulip 50 Nr;<br>Narcissus (large) 40 Nr;<br>Narcissus (medium) 60 Nr; and<br>Narcissus (small) 100 Nr;<br>Other species shall be planted at a suitable rate dependant on species in compliance with the Company's Quality Plan and associated method statements.                                                                                                                                                          |
| 27 | 3006.67                  | Bulbs shall be planted with the base at the depth in accordance with good horticultural practice and in compliance with the Company's Quality Plan and associated method statements.                                                                                                                                                                                                                                                                                                                                                   |
| 28 | 3006.73                  | Reeds, rushes, marginal and aquatic plants shall be planted around the margins of wet pond drainage features in accordance with the New Works Requirements the Company's Quality Plan and associated method statements.                                                                                                                                                                                                                                                                                                                |
| 29 | 3006.77                  | Excavated material from sub-clause 3006.77 operations shall be spread throughout the planting area.                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 30 | 3006.80                  | The Company shall insert marker posts to mark out the boundaries of each planting area.                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 31 | 3006.87                  | The Company shall replace all plants found to be defective or vandalised annually for the duration of the New Works until the end of the Establishment Period.                                                                                                                                                                                                                                                                                                                                                                         |
| 32 | 3006.91                  | All replacement extra heavy standard, heavy standard, standard and rootballed evergreen stock shall be watered to field capacity following planting. All other tree and shrub plants shall be watered to field capacity immediately after planting if there is a risk to plants of water stress or wilting.                                                                                                                                                                                                                            |

## Part 4: Specification

**Appendix 30/6: Planting**

|    |         |                                                                                                                                                                               |
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| 33 | 3006.92 | The Company shall carry out maintenance of new planting in accordance with clauses 3007 and 3009 for the duration of the New Works until the end of the Establishment Period. |
|----|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Part 4: Specification

## Appendix 30/7: Grass, Bulbs and Wildflower Maintenance

| Action Number | Sub-Clause        | Specification Amendment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1             | 3007.1            | All grass and wildflower areas within the boundary of the New Works Site shall be maintained in accordance with Clause 3007.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2             | 3007.5            | No cutting shall be carried out within 250 millimetres of unprotected trees and shrubs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 3             | 3007.17           | <p>Low frequency grass cutting shall be undertaken in accordance with sub-Clause 3007.17 in the following areas:</p> <ul style="list-style-type: none"> <li>(i) A 1.2 metre swathe width measured from the back edge of the carriageway or hard strip. The width of cut shall be increased accordingly where the remaining grass between the 1.2 metre area and any adjacent boundary (such as a wall, fence or planting bed) is less than 2 metres;</li> <li>(ii) Grassed areas within visibility splays; and</li> <li>(iii) Where there are footpaths remote from the carriageway edge where grass between the road and footpath receives a low frequency cut, the outside edge of the footpath shall be subject to the same regime for a width of 1m.</li> </ul> <p>Additional selective cuts shall be undertaken as necessary to maintain visibility. The areas subject to additional selective cuts shall be extended beyond the minimum area required to maintain visibility in order that they appear naturalistic with smoothly curving edges, avoiding straight lines and abrupt angles.</p> |
| 4             | 3007.18           | All grass areas not cut at medium or low frequency shall be cut at a 'minimal frequency' in accordance with sub-Clauses 3007.18-21, except those seeded with a grass/wildflower mixture.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 5             | 3007.20           | Additional selective cuts shall be undertaken if required to maintain visibility of road signs. The areas subject to additional selective cuts shall be extended beyond the minimum area required to maintain visibility in order that they appear naturalistic with smoothly curving edges, avoiding straight lines and abrupt angles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 6             | 3007.22           | All banks and ditches shall be cut in accordance with sub-clause 3007.22. All arisings shall be dispersed over the sward avoiding the blocking of drains and ditches.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 7             | 3007.23           | All grass cutting in planting areas shall be cut in accordance with sub-Clause 3007.23. The cutting shall include bramble but exclude naturally regenerated tree and shrub seedlings, the retention of which would be consistent with the overall management objectives for the planting area and in compliance with the Company's Quality Plan and associated method statements.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 8             | 3007.24           | Arisings shall be evenly spread on site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 8             | 3007.26 - 3007.27 | All areas seeded with wildflower shall be cut according to the most appropriate regime detailed in sub-clause 3007.26 and according to sub-clause 3007.27. The regime is to be in compliance with the Company's Quality Plan and associated method statements to suit the wildflower mix.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

## Part 4: Specification

**Appendix 30/7: Grass, Bulbs and Wildflower Maintenance**

| <b>Action Number</b> | <b>Sub-Clause</b> | <b>Specification Amendment</b>                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9                    | 3007.28           | The ground shall be scarified only where necessary for wildflower colonisation in compliance with the Company's Quality Plan and associated method statements.                                                                                                                                                                                                                                   |
| 10                   | 3007.29           | <p>Spot herbicide treatment in accordance with sub-Clause 3007.29 shall be carried out at an appropriate frequency in all wildflower areas to eliminate undesirable broadleaf weed species.</p> <p>Areas of self-seeding broadleaf plants considered to be desirable for nature conservation shall be retained. These areas shall be identified by the Company to the Contracting Authority.</p> |
| 11                   | 3007.30           | Areas of wildflower seeding that cannot be effectively controlled by chemical means without risk to of damage to wildflowers shall be hand weeded to eliminate undesirable broadleaf weed species.                                                                                                                                                                                               |
| 12                   | Additional Clause | All damaged or failed sward shall be reinstated with seed to match the surrounding area.                                                                                                                                                                                                                                                                                                         |

Part 4: Specification

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**Appendix 30/8: Watering**

| <b>Action Number</b> | <b>Sub-Clause</b> | <b>Specification Amendment</b>                                                                                                                 |
|----------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                    | 3008.6            | The Company shall water all planting for the Establishment Period at a frequency necessary to ensure establishment and survival.               |
| 2                    | 3008.7            | Additional watering in accordance with sub-Clause 3008.7 may be required for all planting and seeding in periods of abnormally dry conditions. |

## Part 4: Specification

**Appendix 30/9: Establishment Maintenance for Planting**

| Action Number | Sub-Clause        | Specification Amendment                                                                                                                                                                                                                                                                                                                             |
|---------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1             | 3009.1            | All planting and planting areas shall be maintained for the Establishment Period in accordance with sub-clauses 3009.2 to 3009.25.                                                                                                                                                                                                                  |
| 2             | 3009.4            | Tree stakes, tubes, guards and ties that are no longer required shall be offered to the Contracting Authority for re-use. Where the Contracting Authority declines the offer the Company shall dispose of them to a licensed disposal facility.                                                                                                     |
| 3             | 3009.9            | Delete sub-Clause 9 and insert:<br><br>Plant circles shall be defined as the area within 250 millimetres radius of an individual tree or shrub, within which weed control operations shall be carried out.                                                                                                                                          |
| 3             | 3009.10           | Translocated herbicide shall be applied at a frequency as necessary to keep plant circles in all woodland and scrub planting areas weed free, whilst protecting trees and shrubs from the herbicide. Hand weeding shall be undertaken to remove weeds from within tree and shrub shelters and guards.                                               |
| 4             | 3009.11           | Where alternative means of weed control prove ineffective residual herbicide shall be applied at a frequency as necessary to keep plant circles in all woodland and scrub planting areas weed free in accordance with sub-Clause 3009.11.                                                                                                           |
| 5             | 3009.12           | Mulch shall be maintained in accordance with sub-clause 3009.12 in amenity / ornamental shrub planting areas.                                                                                                                                                                                                                                       |
| 6             | 3009.18           | Mulch shall be maintained in accordance with sub-clause 3009.18 in all cultivated beds.                                                                                                                                                                                                                                                             |
| 7             | 3009.20           | All hedges and an area of 300mm width on either side of the hedge plants bases shall be maintained weed free for the duration of the Establishment Period in accordance with sub-clause 3009.20.                                                                                                                                                    |
| 8             | 3009.25           | All extra heavy standard and heavy standard trees and rootballed conifer trees shall be inspected and maintained annually in accordance with sub clause 3009.25.                                                                                                                                                                                    |
| 10            | Additional Clause | During the first 2 years after planting, hedge plants shall be pruned once each year between 1 <sup>st</sup> September and 31 <sup>st</sup> January to encourage formation of a vigorous, compact, uniform hedge. The current year's growth of prominent new shoots shall be reduced in length by one third. Arisings shall be distributed on site. |

## Part 4: Specification

**Appendix 30/10: Maintenance of Established Trees and Shrubs**

| <b>Action No.</b> | <b>Sub-Clause</b> | <b>Specification Amendment</b>                                                                                                                                                                                                                                  |
|-------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                 | 3010.1            | All established trees and shrubs shall be maintained for the duration of the period of the New Works in accordance with sub-clauses 3010.2 - 3010.71.                                                                                                           |
| 2                 | 3010.4            | Healthy arisings shall be dealt with in accordance with one or more of items (iv) to (ix) of sub-Clause 3010.4 in compliance with the Company's Quality Plan and associated method statements.                                                                  |
| 4                 | 3010.8            | Shrubs grown for coloured stems shall be pruned once every two years in accordance with sub-Clause 3010.8 paragraph (i).<br><br>Overgrown shrubs to be coppiced back in accordance with sub-Clause 3010.8 paragraph (vii).                                      |
| 5                 | 3010.12           | Hedges shall be cut once a year in accordance between September and January.                                                                                                                                                                                    |
| 6                 | 3010.20           | If any hedge laying shall be required it shall be undertaken in an appropriate style in order to reflect the adjacent or local appearance.                                                                                                                      |
| 7                 | 3010.22           | Mixed hedgerows shall be laid in an appropriate style in order to reflect the adjacent or local appearance.                                                                                                                                                     |
| 8                 | 3010.31           | New hedge plants to infill significant gaps in hedges after they have been laid or cut shall be of size, species, and planting density to match the existing hedgerow.                                                                                          |
| 9                 | 3010.45           | Tree size categories shall be in compliance with the Company's Quality Plan and associated method statements.                                                                                                                                                   |
| 10                | 3010.54           | Crown lifting shall be in compliance with the Company's Quality Plan and associated method statements.                                                                                                                                                          |
| 11                | 3010.55           | Crown thinning shall be in compliance with the Company's Quality Plan and associated method statements.                                                                                                                                                         |
| 12                | 3010.56           | Crown reduction or reshaping shall be in compliance with the Company's Quality Plan and associated method statements.                                                                                                                                           |
| 13                | 3010.57           | Straight felling shall be in compliance with the Company's Quality Plan and associated method statements.                                                                                                                                                       |
| 14                | 3010.58           | Sectional felling shall be in compliance with the Company's Quality Plan and associated method statements.                                                                                                                                                      |
| 15                | 3010.59           | Stumps shall be cut as close to the ground as possible or where the tree is growing in a hedge the stump shall be left level with the top of the hedge.                                                                                                         |
| 16                | 3010.60           | Stump treatment shall be in compliance with the Company's Quality Plan and associated method statements.                                                                                                                                                        |
| 17                | 3010.62           | Stump removal shall be in compliance with the Company's Quality Plan and associated method statements.                                                                                                                                                          |
| 18                | 3010.63           | All arisings shall be disposed of off the New Works Site or placed within woodland areas as log piles and or windrows where this is consistent with the management objectives for the woodland and the Company's Quality Plan and associated method statements. |

## Part 4: Specification

**Appendix 30/10: Maintenance of Established Trees and Shrubs**

| <b>Action Number</b> | <b>Sub-Clause</b> | <b>Specification Amendment</b>                                                                                                                                                                                                                                                    |
|----------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 19                   | 3010.65           | Thinning and coppicing shall be carried out in areas of establishing and maturing woodland in accordance with Table 30/10.1 and where identified as being required by the Company's regular inspections.                                                                          |
| 20                   | 3010.68           | Undesirable scrub species shall be controlled in accordance with Table 30/10.1 and where identified as being required by the Company's regular inspections.                                                                                                                       |
| 21                   | 3010.69           | Undesirable scrub tree and shrub species that shall be controlled shall typically have a stem diameter of 0-75 millimetres and a height of 0.75-2.5 metres.                                                                                                                       |
| 22                   | Additional Clause | Undesirable scrub species shall be cut down to 50mm above ground level and plants allowed to re-grow. The Company shall then apply translocated herbicide during the first year of active growth after cutting at a suitable time to maximize the effectiveness of the herbicide. |
| 23                   | 3010.71           | Operations in accordance with sub-clause 3010.71 shall be carried out in compliance with Table 30/10.1 and the Company's Quality Plan and associated method statements.                                                                                                           |



## Part 4: Specification

**Appendix 30/11: Management of Waterbodies**

| <b>Action Number</b> | <b>Sub-Clause</b> | <b>Specification Amendment</b>                                                                                                                                                                                                                                                                                                   |
|----------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                    | 3011.1            | The management operations under Clause 3011 shall take place in all waterbodies and open ditches within the New Works Site.                                                                                                                                                                                                      |
| 2                    | 3011.3            | All inlets and outlets that shall be part of the road drainage system within the New Works Site shall be inspected in accordance with sub-Clause 3011.3.                                                                                                                                                                         |
| 3                    | 3011.4            | The Company shall eliminate weeds as listed in Clause 3002 from within or adjacent to water bodies.                                                                                                                                                                                                                              |
| 4                    | 3011.6            | Injurious weeds on the banks of water courses and within the New Works Site shall be removed by hand in accordance with sub-clause 3002.8.                                                                                                                                                                                       |
| 6                    | 3011.8            | Silt shall be removed from waterbodies that are part of the road drainage system as required to maintain their functional requirements in accordance with sub-Clause 3011.8. The Company shall be responsible for consulting with SEPA and any other relevant bodies prior to undertaking any operations affecting a water body. |
| 7                    | 3011.9            | All reedbeds and marginal plants shall be inspected twice a year in early February and October in accordance to sub-clause 3011.9.                                                                                                                                                                                               |
| 8                    | Additional Clause | All marginal aquatic plants shall be maintained by the Company for the duration of the New Works until the end of the Establishment Period with any failed or defective plants replaced annually in accordance with Clause 3006.                                                                                                 |

Part 4: Specification

**Appendix 30/12: Specialist Ecological Measures**

| Action Number | Sub-Clause | Specification Amendment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1             | 3012.1     | Special ecological measures shall be maintained for the duration of the New Works until the end of the Establishment Period.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 2             | 3012.2     | Special ecological measures works shall be carried out in seasons to be agreed with SNH and any other relevant consultees.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 3             | 3012.3     | Dry mammal underpasses, culverts and culvert ledges, aquaduct ramps, overbridges, underbridges, fencing and underpasses and any other mitigation measures for wildlife shall be designed, located and installed in accordance with the requirements of SNH, DMRB and any other relevant consultees and shall take account of current best practice and statutory guidance. If there is any discrepancy between SNH's requirements and Clause 3012, SNH's requirements shall prevail.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|               |            | <p>The location and extent of fencing for protected fauna shall be consistent with the requirements of the Environmental Assessment Documents, SNH and any other relevant consultees.</p> <p>All badger and otter fencing shall be completed to the approval of the Company's ecological specialist who shall oversee installation. Fencing shall be completed in advance of opening the road to vehicular traffic.</p> <p>Where there is the requirement for badger or otter fencing along the same line as other fence types (e.g. a permanent boundary of stock proof fencing or deer fencing) a single fence which combines the specifications and functions of both types of shall be used.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|               |            | <p>Badger proof fencing shall be in accordance with the following specification:</p> <p>Post and mesh fences in accordance with British Standard BS 1722 part 2: 2006 "Specification for strained wire and wire mesh netting fences" with a steel wire mesh having maximum openings of 50 mm X 50 mm and wires of not less than 2.5 mm diameter in accordance with British Standard BS 4102: 1998 "Specification for steel wire for general fencing purposes" and galvanised to British Standard EN ISO 1461: (2009). "Hot dip galvanized coatings on fabricated iron and steel articles - specifications and test methods". The mesh shall be securely stapled to the posts and rails of the fences. Stobs shall be spaced no more than 1.8 m apart. The mesh shall extend a minimum of 1000 mm above ground level and be buried vertically to 300 mm below ground and turned at right angles from the bottom of the buried section towards the direction from which badgers are expected to approach for a further 300 mm. The return shall consist of a separate roll of mesh attached with clips to the bottom of the vertical mesh. The vertical mesh shall be secured at ground level by a galvanised wire not less than 5 mm in diameter. A single strand of barbed wire shall be secured along the top of the fence. Fixings for attachment to Structures shall use a resin fixed replaceable bolt system, fencing and stone walls shall be tied into structures either at headwalls, abutments or parapets as appropriate and shall join at a 90 ° angle with a gap no greater than 50 mm.</p> |

## Part 4: Specification

**Appendix 30/12: Specialist Ecological Measures**

| Action Number | Sub-Clause | Specification Amendment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |            | <p>Otter and badger proof fencing shall be in accordance with the following specification:</p> <p>Post and mesh fences in accordance with British Standard BS 1722 part 2: 2006 "Specification for strained wire and wire mesh netting fences" with a rectangular steel wire mesh having maximum openings of 50 mm X 50 mm and wires of not less than 2.5 mm diameter in accordance with British Standard BS 4102: 1998 "Specification for steel wire for general fencing purposes" and galvanised to British Standard EN ISO 1461: (2009). "Hot dip galvanized coatings on fabricated iron and steel articles - specifications and test methods". The mesh shall be securely stapled to the posts and rails of the fences. Stobs shall be spaced no more than 1.8 m apart. The mesh shall extend a minimum of 1500 mm above ground level and be buried vertically to 300 mm below ground and turned at right angles from the bottom of the buried section towards the direction from which otters or badgers are expected to approach for a further 300 mm. The return shall consist of a separate roll of mesh attached with clips to the bottom of the vertical mesh. The vertical mesh shall be secured at ground level by a galvanised wire not less than 5 mm in diameter. The top of the fence will have a meshed overhang of 30 mm angled at 45 degrees away from the road. Fixings for attachment to Structures shall use a resin fixed replaceable bolt system, fencing and stone walls will be tied into structures either at headwalls, abutments or parapets as appropriate and will join at a 90 ° angle with a gap no greater than 50 mm. Where fencing is required around culvert entrances fencing shall be installed around the back of the culvert entrance ensuring that there are no gaps onto the carriageway and that passage by mammals over and around the back of the culvert entrance is not possible.</p> |
|               |            | <p>Where the New Works require construction of both drystone walls and badger or badger and otter proof fencing, the fencing shall be erected on the non-highway side of the drystone wall. Any drystone wall on the road side of any badger or badger and otter proof fencing shall be positioned in such a manner as to not encourage undesirable use of that drystone wall by the species for which the fencing has been erected.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|               |            | <p>Badger Gates shall be constructed in accordance with the RSPCA publication 'Problems with Badgers?' All badger gates shall incorporate concrete sills to prevent digging or erosion.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

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**Appendix 30/12: Specialist Ecological Measures**

| Action Number | Sub-Clause | Specification Amendment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |            | <p>Badger and otter proof access gates shall be installed in accordance with the following specification:</p> <p>A 100 mm concrete sill shall be installed underneath access gates. The gate shall close to leave a gap of about 10 mm between the slab and the bottom rail. Mesh having maximum openings of 50 mm under any circumstances shall be attached to the inside of the gate to ensure no gap exists. No gaps greater than 50 mm shall be present on either side of the gate.</p> <p>Badger and Otter proof noise barriers shall be installed in accordance with the following specification:</p> <p>Environmental and Noise barriers shall have an underground anti-burrow deterrent attached to the base of the bottom panel/section of the barrier where required to prevent otter and badger breach of the barrier. The deterrent shall be a welded mesh buried vertically to 300 mm below ground and then bent at right angles from the bottom of the buried section away from the new road for distance of 300 mm. Where mesh cannot be used a concrete log extending 300 mm below the barrier and away from the new road for a further 300 mm from the base of the barrier shall be installed.</p> |

## Part 4: Specification

**Appendix 30/12: Specialist Ecological Measures**

| Action Number | Sub-Clause | Specification Amendment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               |            | <p>Dry mammal underpasses, wildlife bridges, culverts and culvert ledges overbridges, underbridges and underpasses shall be installed in a manner and at locations recommended by the Company's ecological specialist as follows, in line with the Environmental Assessment Documents and protected species licence requirements as conditioned by SNH:</p> <p>Bridges, structures and culverts designed to carry water shall incorporate a ledge or platform not less than 150 mm above the highest flood level, not less than 600 mm wide and allowing headroom of not less than 600 mm over the full width of the ledge or platform. Access ramps with a minimum width of 300 millimetres and a maximum gradient of 1 in 2 from the ledge or platform to the adjacent banks of the watercourse and to the normal water level shall be provided at each end.</p> <p>Dry mammal underpasses shall be constructed using cylindrical pipes of 600 mm or greater for lengths of 20m or less, no less than 900 mm for crossing between 20 to 50 m in length and where greater than 50m in length a minimum of 1050 mm. Pipes shall be constructed above possible water levels and incorporate a gradual fall to the outside, and shall also have sealed joints to prevent water seepage. They shall be in a straight line to maintain line of sight and there shall be no step between the underpass entrance and the ground level. The design shall allow surface water to drain away from the entrances such that ponding does not occur at any time. Head wall design shall prevent animals from climbing over adjacent mitigation fencing and headwalls shall be located in a shallow recess within the fence alignment. Underpasses shall be designed in accordance with the SNH publication Badgers and Development (SNH 2001) and the DMRB (Highways Agency 2001).</p> <p>A squirrel crossing shall be installed across the A947 at approximate chainage 324400 (offline), close to the northern tie-in of the new A947 to the existing route of the A947. This shall be constructed in accordance with the following specification.</p> <p>Two lengths of synthetic rope (with a textured surface rather than a waxy surface) approximately 40 mm in diameter shall be tightly strung approximately 100 mm apart between two telegraph poles. A zig-zag of narrow-gauge synthetic rope of similar type shall be attached between the two parallel ropes along their full length using plastic zip-ties which shall be trimmed in length to ensure that there are no rough edges. The rope bridge shall be suspended at least 6 m above the carriageway and be positioned within the Land Made Available by the Scottish Ministers to encourage use of the rope bridge by squirrels. Following erection of the rope bridge feeders shall be installed at suitable locations at either end of the bridge to encourage use by squirrels, and the feeders shall be regularly replenished.</p> |
| 4             | 3012.4     | Wildlife grilles shall be designed and located in accordance with the requirements of SNH and any other relevant consultees.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

## Part 4: Specification

**Appendix 30/12: Specialist Ecological Measures**

| Action Number | Sub-Clause | Specification Amendment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5             | 3012.5     | In February and October of each year the Company shall inspect all dry mammal underpasses, aquaducts, wildlife bridges, culverts and culvert ledges, overbridges, underbridges, underpasses and the squirrel crossing and report their condition to the Contracting Authority.<br><br>In February and October of each year the Company shall inspect all wildlife fences, badger gates, badger and otter access gates and grilles and report their condition to the Contracting Authority                                                                          |
| 6             | 3012.6     | Reflectors shall be designed and located in accordance with the requirements of SNH and any other relevant consultees.                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 7             | 3012.7     | Reflectors shall be inspected monthly in accordance with the sub-Clause 3012.7.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 8             | 3012.8     | Bat boxes, squirrel boxes and bird nesting boxes shall be installed in accordance with the requirements of SNH and any other relevant consultees.                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 9             | 3012.9     | Bat boxes, squirrel boxes and bird nesting boxes shall be inspected annually and their condition reported to the Contracting Authority in accordance with the requirements of SNH, any protected species licensing requirement and any other relevant consultees                                                                                                                                                                                                                                                                                                   |
| 10            | 3012.10    | Bat boxes, squirrel boxes and bird nesting boxes shall be repaired or if not possible replaced with a like for like model within one month                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 11            | 3012.11    | Other habitat creation measures including artificial badger setts, otter holts, amphibian ponds, reptile hibernacula, water vole habitat areas, and red squirrel bridge, bat mitigation in buildings, culverts and principal structures shall be inspected annually and their condition reported to the Contracting Authority. The Company shall consult and comply with the requirements of SNH, any protected species licensing requirement and any other relevant consultees in respect of Works likely to impact upon or affect any protected species or area. |
| 12            | 3012.12    | Information about the location of Protected Species is in the environmental assessment documents. This information is confidential.                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 13            | 3012.13    | The Company shall obtain licenses or use only licensed operatives for all works in the vicinity of protected species. Working buffer zones shall comply with SNH requirements                                                                                                                                                                                                                                                                                                                                                                                      |
| 14            | 3012.14    | Landscape planting within 30 m of any protected species mitigation shall be undertaken in consultation with SNH and the Company's ecological specialist to determine an appropriate methodology.                                                                                                                                                                                                                                                                                                                                                                   |
| 15            | 3012.15    | Artificial, moveable hedges required for bat mitigation in relation to temporary works shall be designed and located in accordance with the requirements of SNH and any other relevant consultees. The movement of these hedges shall be approved by the Company's ecological specialist who shall oversee their installation.                                                                                                                                                                                                                                     |
| 16            | 3012.16    | Water levels within culverts shall be sufficient enough to enable fish passage at all times of the year and be free of any obstruction. Fish species shall be protected and moved from the area affected by the works and placed into the watercourse further downstream.                                                                                                                                                                                                                                                                                          |



Aberdeen Western Peripheral Route / Balmedie-Tipperty  
AWPR / B-T Managing Agent, Aberdeen Business Centre,  
Willowbank House, Willowbank Road, Aberdeen AB11 6YG

Tel: **01224 332322** | Fax: **01224 322 361**

Email: [enquiries@awpr.co.uk](mailto:enquiries@awpr.co.uk) | Web: [www.awpr.co.uk](http://www.awpr.co.uk)

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# Aberdeen Western Peripheral Route / Balmedie - Tipperty

Competition for the Design, Build, Finance and Operation of the  
Aberdeen Western Peripheral Route / Balmedie - Tipperty

Volume Five

Schedule 2: New Works Requirements

Part 5: Certification

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**SCHEDULE 2: NEW WORKS REQUIREMENTS****PART 5: CERTIFICATION****CONTENTS**

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**SCHEDULE 2: NEW WORKS REQUIREMENTS**

**PART 5: CERTIFICATION**

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## Part 5: Certification

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**1 Introduction**

- 1.1 The Company shall provide to the Contracting Authority certification to cover the Design or Design Elements, construction and completion of the New Works.
- Compliance with these procedures shall not relieve the Company of its responsibilities under the terms of this Agreement.
- 1.2 Models of certificates are given in Appendix 1.
- The Contracting Authority shall not accept modifications or qualifications to these certificates unless agreed in writing by the Contracting Authority.
- 1.3 The Certification Procedure associated with a part of the Design or Design Element shall be deemed to cover all aspects of the part of the Design or Design Element and as described in sections 2 to 16 inclusive.
- 1.4 The Company shall maintain and provide to the Contracting Authority a register recording names and original signatures of individuals authorised to carry out the various functions of the Designer(s) and Design Checker(s) set out below.
- The only person authorised to delegate the various functions of the respective Designer(s) and Design Checker(s) shall be a Director of the respective organisation.
- The Company shall maintain and provide to the Contracting Authority a register recording name(s) and original signature(s) of the individuals authorised to sign certificates in accordance with this Certification Procedure on behalf of the New Works Contractor.
- 1.5 The Company shall ensure that the Company's Representative:
- 1.5.1 is at all relevant times appointed to carry out the procedures referred to in the Certification Procedure; and
- 1.5.2 shall at all times comply with the Certification Procedure.
- 1.6 The Company shall ensure that the checking procedures referred to in the Certification Procedure are complied with by the Company's Representative.
- 1.7 The Company shall maintain and provide to the Contracting Authority a register recording the current status of all certificates set out below.
- 1.8 Subject to requirements of this Certification Procedure, construction of any part of the New Works requiring certification shall not commence until the relevant certification required by the Certification Procedure shall have been completed and shall have been acknowledged by the Contracting Authority.
- 1.9 Design Data, which is the subject of any part of this Certification Procedure, shall not be amended until the relevant certification in respect of such amendment shall have been submitted to the Contracting Authority in accordance with the Certification Procedure.

## **2 Design Certificates and Design Check Certificates**

2.1 Separate Design Certificates and Design Check Certificates shall be required where applicable for all parts of the Design or Design Elements including but not limited to:

2.1.1 fencing and environmental barriers;

2.1.2 road restraint systems;

2.1.3 drainage;

2.1.4 earthworks:

(i) earthworks (site clearance);

(ii) earthworks (bulk);

(iii) grouting;

(iv) piling;

2.1.5 road pavements;

2.1.6 road layout;

2.1.7 kerb, footways and paved areas;

2.1.8 signs and road markings;

2.1.9 lighting;

2.1.10 electrical installations;

2.1.11 Structures;

2.1.12 environment and landscaping;

2.1.13 Undertakers;

2.1.14 Accommodation Works;

2.1.15 Traffic Scotland equipment; and

2.1.16 otherwise.

Separate Design Certificates and Design Check Certificates shall be required for each Structure Design.

2.2 Notwithstanding any other requirements of this Agreement, the Design check for each part of the Design or Design Elements shall be carried out by a Design Checker who shall be technically independent of:

2.2.1 the Designer;

2.2.2 the New Works Contractor; and

2.2.3 their associated companies.

## Part 5: Certification

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- 2.3 The Company shall submit two copies of the details of the proposed Design Checker for approval by the Contracting Authority.
- The Contracting Authority shall consider the proposed Design Checker and shall issue written approval of or comment on such to the Company.
- 2.4 The requirements for earthworks certification detailed herein shall supersede those of the DMRB.
- A Geotechnical Design Report shall be prepared for all earthworks, foundations and other geotechnical design elements.
- The final report(s) shall be submitted prior to submittal of the relevant Construction Certificate(s).
- 2.5 Each Design Certificate submitted by the Company shall be signed by:
- 2.5.1 the Designer;
- 2.5.2 the New Works Contractor; and
- 2.5.3 the Company.
- Each Design Check Certificate submitted by the Company shall be signed by:
- 2.5.4 the Design Checker;
- 2.5.5 the New Works Contractor; and
- 2.5.6 the Company.
- 2.6 The Company shall submit to the Contracting Authority two copies of each signed certificate, with original signatures, along with a minimum of four hard copies and one pdf copy of all relevant drawings, schedules, appendices and otherwise required to accompany each certificate. One copy of each certificate shall be returned to the Company within 7 days of receipt, signed in acknowledgement by the Contracting Authority.
- 2.7 The Company shall provide with each Design Certificate and Design Check Certificate the relevant drawings, schedules and appendices as detailed in paragraph 3.2.6.

### **3 Design Interim Certificates and Design Check Interim Certificates: Staged Procedure**

- 3.1 The parts of the Design or Design Elements identified in paragraph 2.1 requiring Design Certificates and Design Check Certificates may each be further divided to:
- 3.1.1 accommodate the Company's phasing of the New Works; and
- 3.1.2 enable construction of the further divided part of the Design or Design Elements to proceed.
- 3.2 Where this method of certification shall be adopted the following procedure shall apply:
- 3.2.1 For each further divided part of the Design or Design Element, the Company shall submit to the Contracting Authority two copies of a schedule of such further divided parts of the Design or Design Element which it proposes to certify. One copy of the schedule shall be returned to the Company within 7 days of receipt, signed in acknowledgement of receipt by the Contracting Authority.

## Part 5: Certification

This process shall be completed prior to the implementation of the staged procedure and the schedule incorporated into the Design register referred to in paragraph 1.8.

- 3.2.2 The Company shall submit to the Contracting Authority two copies of each Design Interim Certificate and Design Check Interim Certificate for each further divided part of the Design or Design Element, with original signatures, along with a minimum of four hard copies and one pdf of all relevant drawings, schedules, appendices and otherwise requiring to accompany each certificate. One copy of each Interim Certificate shall be returned to the Company within 7 days of receipt, signed in acknowledgement of receipt by the Contracting Authority.
- 3.2.3 Construction for any part of the New Works for each of the further divided parts of the Design or Design Element requiring certification shall not commence until this procedure shall have been completed.
- 3.2.4 Once all Design Interim Certificates and Design Check Interim Certificates for a part of the Design or Design Element identified in paragraph 2.1 have been completed, the Company shall submit to the Contracting Authority two copies of the Design Certificates and Design Check Certificates for each part of the Design or Design Elements with original signatures along with one copy of all relevant drawings, schedules, appendices and otherwise. One copy of each certificate shall be returned to the Company within 7 days of receipt, signed in acknowledgement of receipt by the Contracting Authority.
- 3.2.5 Each Design Interim Certificate submitted by the Company shall be signed by:
- (i) the Designer;
  - (ii) the New Works Contractor; and
  - (iii) the Company.
- Each Design Check Interim Certificate submitted by the Company shall be signed by:
- (iv) the Design Checker;
  - (v) the New Works Contractor; and
  - (vi) the Company.
- 3.2.6 The Company shall provide with each Design Certificate, Design Check Certificate, Design Interim Certificate and Design Check Interim Certificate the relevant drawings, schedules and appendices including, but not limited to:
- (i) plans to a scale of not less than 1:500 of the road layout showing the
    - (a) Special Road(s)
    - (b) Trunk Road(s)
    - (c) Side Road(s);
    - (d) Access Tracks, New Means of Access and otherwise;
    - (e) Accommodation Works Access Tracks; and
    - (f) otherwise;
  - (ii) drawings of the road construction giving typical cross-sections;
  - (iii) drawings to a scale of not less than 1:500 showing all:
    - (a) drains;
    - (b) underground pipes;



## Part 5: Certification

- (c) boundary fences;
  - (d) road restraint systems;
  - (e) environmental barriers;
  - (f) kerbs;
  - (g) footways;
  - (h) footpaths;
  - (i) paved areas;
  - (j) electrical equipment;
  - (k) signs;
  - (l) road markings;
  - (m) environmental and landscape;
  - (n) Traffic Scotland equipment; and
  - (o) Otherwise.
- (iv) drawings to a scale not less than 1:200 showing all relevant aspects of the Structures including but not limited to reinforcement details and schedules; and
- (v) any other schedules or supporting information which are listed in the Numbered Appendices within the Specification.

#### **4 Interim Construction Certificates**

4.1 An Interim Construction Certificate signed by:

4.1.1 the Designer;

4.1.2 the New Works Contractor; and

4.1.3 the Company;

shall be provided by the Company at the end of each calendar month prior to the date of Substantial Completion of each Phase of the New Works.

4.2 An Interim Construction Certificate shall be completed in respect of parts of the New Works constructed during that month.

4.3 The Company shall submit to the Contracting Authority two copies of each certificate with original signatures. One copy of each certificate shall be returned to the Company within 7 days of receipt signed in acknowledgement by the Contracting Authority.

#### **5 Final Construction Certificates**

5.1 A Final Construction Certificate signed by:

5.1.1 the Designer;

5.1.2 the New Works Contractor; and

5.1.3 the Company

shall be provided by the Company on completion of the construction of each certified part of the Design or Design Element as identified in paragraph 2.1.

## Part 5: Certification

5.2 Upon Substantial Completion of the last Phase of the New Works the Company shall supply a Final Construction Certificate in respect of the whole of the New Works in addition to an Interim Construction Certificate in respect of the final month of construction.

5.3 The Company shall submit to the Contracting Authority two copies of each certificate with original signatures. One copy of each certificate shall be returned to the Company within 28 days of receipt signed in acknowledgement by the Contracting Authority.

## 6 Interim Defect Correction Certificates

6.1 During the period identified in Clause 12.1.5, Interim Defect Correction Certificates shall be required for Side Roads and Third Party Roads which shall not form the O&M Roads

6.2 An Interim Defect Correction Certificate signed by:

6.2.1 the Designer;

6.2.2 the New Works Contractor; and

6.2.3 the Company;

shall be provided by the Company at the end of each calendar month during the Defects Liability Period.

6.3 The Company shall submit to the Contracting Authority two copies of each certificate with original signatures.

One copy of each certificate shall be returned to the Company within 7 days of receipt signed in acknowledgement by the Contracting Authority.

## 7 Final Defect Correction Certificate

7.1 A Final Defect Correction Certificate shall be required for Side Roads and Third Party Roads which shall not form the O&M Roads which are subject to the remedy of Defects as detailed in Clause 12.1.5.

7.2 A Final Defect Correction Certificate signed by:

7.2.1 the Designer;

7.2.2 the New Works Contractor; and

7.2.3 the Company;

shall be provided by the Company at the end of the period identified in Clause 12.1.5 for each part of the certified Design or Design Element as identified in paragraph 2.1.

7.3 The Company shall submit to the Contracting Authority two copies of each certificate with original signatures. One copy of each certificate shall be returned to the Company within 28 days of receipt signed in acknowledgement by the Contracting Authority.

## 8 Consultation Certificates

8.1 Where within these New Works Requirements there shall be a requirement to consult and comply with a third party, the Company shall provide a completed Consultation Certificate to the Contracting Authority. Subject to the other provisions of this Agreement, the Company shall comply with the special requirements relating to third parties which are listed in Part 7 of these New Works Requirements. Following consultation, the Company shall provide Consultation Certificates signed by:

8.1.1 the Designer;

## Part 5: Certification

- 
- 8.1.2 the New Works Contractor;
- 8.1.3 the Company; and
- 8.1.4 the relevant third parties.
- 8.2 The Company shall submit to the Contracting Authority two copies of each certificate, with original signatures together with a minimum of four hard copies and one pdf copy of all relevant documentation including drawings, other information and associated correspondence between the Company and the relevant third party. One copy of each certificate shall be returned to the Company within 7 days of receipt, signed in acknowledgement by the Contracting Authority.
- 8.3 The Company shall not commence any works which affect the interests of any relevant third party until this procedure is completed.
- 8.4 If following such consultation a relevant third party refuses or unreasonably delays in signing the Consultation Certificate the Company may provide to the Contracting Authority:
- 8.4.1 full details of the consultation undertaken with such third party;
- 8.4.2 full details of the best endeavours the Company has made to obtain the signed Consultation Certificate; and
- 8.4.3 full details of the Company's reasons and justification for allowing the Company to commence the New Works in question without such Consultation Certificate;
- and the Contracting Authority, having considered such information, may at his discretion dispense with the requirement to provide the signed Consultation Certificate in question.
- 8.5 Notwithstanding the other provisions of this Agreement, where there is a requirement to consult there shall be an equivalent requirement to provide a certificate of such consultation to the Contracting Authority in accordance with this paragraph 8.
- Notwithstanding the requirement to consult and comply within these New Works Requirements, where, as a result of such consultation or otherwise any part of the Design or Design Element proposed does not meet the requirements of these New Works Requirements it shall remain the responsibility of the Company to Design and construct the New Works in accordance with the Agreement. For the avoidance of doubt, these New Works Requirements shall take precedence over any changes that may be proposed by the Company following consultation unless agreed in writing by the Contracting Authority in accordance with this Certification Procedure and the Agreement.

## **9 Road Safety Audit Certificates**

- 9.1 Safety Audit Team
- 9.1.1 The Company shall submit two copies of the names and curricula vitae of the proposed Safety Audit Team members for approval by the Contracting Authority. The Safety Audit Team shall be independent of:
- (i) the Company;
  - (ii) the New Works Contractor;
  - (iii) the Designer(s);
  - (iv) the Design Checker(s); and
  - (v) any of their associated companies.

## Part 5: Certification

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- 9.1.2 The Contracting Authority shall consider the proposed Safety Audit Team and shall issue written approval of or comment on such to the Company.
- 9.1.3 The Contracting Authority may object to such proposal only for the reason that:
- (i) the proposed Safety Audit Team is not independent of:
    - (a) the Company;
    - (b) the New Works Contractor;
    - (c) the Designer(s);
    - (d) the Design Checker(s); and
    - (e) any of their associated companies; or
  - (ii) the proposed Safety Audit Team does not have, in the opinion of the Contracting Authority, sufficient training or experience of road safety and accident investigation and prevention appropriate to the Road Safety Audit to be undertaken.
- 9.2 Road Safety Audits shall be carried out in accordance with the requirements of Part 1 of these New Works Requirements.
- The Company shall submit to the Contracting Authority two copies of the relevant Road Safety Audit Certificates for each stage of the Road Safety Audit procedure with original signatures together with a minimum of four hard copies and one pdf copy of all relevant documentation including drawings, other information and associated correspondence. One copy of each certificate shall be returned to the Company within 7 days of receipt signed in acknowledgement of receipt by the Contracting Authority.
- 9.3 The Road Safety Audit Certificates shall be issued once the following procedure has been completed:
- 9.3.1 Either the Designer(s) and Design Checker(s) accepts the Safety Audit Team recommendations; or
  - 9.3.2 The Designer(s) submits alternative solutions/proposals to the Safety Audit Team and these are accepted by the Safety Audit Team; or
- The Designer(s) submits alternative solutions/proposals to the Safety Audit Team and because these are not accepted by the Safety Audit Team, submits an Exception Report to the Director for arbitration (as defined in DMRB). In this case the decision of the Director shall be binding on the Company.
- 9.4 Road Safety Audits for Temporary Traffic Management Schemes
- The Company shall submit to the Contracting Authority, two copies of a Stage 2 Road Safety Audit Certificate for each audited Temporary Traffic Management Scheme with original signatures together with a minimum of four hard copies and one pdf copy of all relevant documentation including drawings, other information and associated correspondence not less than ten days before implementation of such Temporary Traffic Management Scheme. One copy of each certificate shall be returned to the Company within 7 days of receipt signed in acknowledgement of receipt by the Contracting Authority.
- 9.4.1 The Company shall submit to the Contracting Authority two copies of a Stage 3 Road Safety Audit Certificate for each audited temporary traffic management scheme with original signatures together with a minimum of four hard copies and one pdf copy of all relevant documentation including drawings, other information and associated

correspondence not less than one day after implementation of such temporary traffic management scheme

One copy of each certificate shall be returned to the Company within 7 days of receipt signed in acknowledgement of receipt by the Contracting Authority.

## **10 Trunk Road Cycle Audit Certificates**

10.1 Trunk Road Cycle Audits shall be carried out in accordance with the requirements of Part 1 of these New Works Requirements.

The Company shall submit to the Contracting Authority, two copies of the Stage 2 Trunk Road Cycle Audit Certificates with original signatures together with a minimum of four hard copies and one pdf copy of all relevant documentation including drawings, other information and associated correspondence. One copy of each certificate shall be returned to the Company within 7 days of receipt signed in acknowledgement of receipt by the Contracting Authority.

10.2 The Trunk Road Cycle Audit Certificates shall be issued once the following procedure has been completed:

10.2.1 Either the Designer(s) and Design Checker(s) accepts the cycle audit team recommendations; or

10.2.2 The Designer(s) submits alternative solutions/proposals to the cycle audit team and these are accepted by the cycle audit team.

## **11 Departures**

11.1 The Company shall submit to the Contracting Authority a minimum of five hard copies and one pdf copy of each Application for Departure From Standards, with original signatures together with a minimum of five hard copies and one pdf copy of all relevant documentation including drawings, other information and associated correspondence. One copy of each Departure From Standards shall be returned to the Company within 7 days of receipt, signed in acknowledgement by the Contracting Authority.

11.2 Each Departure submission to the Contracting Authority shall include as a minimum the information detailed below:

11.2.1 For Departure applications to Volume 6 of the DMRB (Road Geometry), the Company shall provide the information required on the 'Application for Departure From Standards DMRB Volume 6 (Road Geometry)' Proforma contained in Appendix 1.

11.2.2 Departure submission excluding DMRB Volumes 1 to 3 (Structures):

(i) Description of Departure

1:10,000 location plan; 1:500 detailed plan; design speed of road; a statement of the strategy for the route; description of context including contiguous affected adjacent sections of routes in a 2 to 3 kilometres range; desirable minimum standard; proposed Departure including number of steps from desirable minimum standard; details of other Departures or Relaxations affecting the same or related Design elements and otherwise and reasons for the Departure.

(ii) Safety (History of feature)

Performance of Departure feature elsewhere; a risk assessment including different user category effects.

(iii) Compensatory Measures

## Part 5: Certification

Proposed adjustment to the Design to mitigate the effects of the Departure, including use of upgraded materials such as high skid resistant surfacing; improved signing and lining such as warning signs/ladder markings and otherwise; need for further enforcement measures and need for further statutory measures including the introduction of speed restrictions.

## (iv) Cost Consequences

A summary of the cost implications of applying the Departure, including capital cost effects; increased maintenance costs; increases in vehicle operating costs and accident costs and other user dis-benefits.

## (v) Environmental Consequences

The effects, if any which the Departure may have on the Environment in terms of human, flora, fauna, soil, water, air, climate, landscape, materials assets, cultural heritage issues and otherwise.

## (vi) Structural Integrity

Where applicable supply details of any possible effects the Departure may have in relation to the structural integrity/stability of earthworks, Structures and road pavements.

## (vii) Any other relevant information.

## 11.2.3 Departures from DMRB Volumes 1 to 3 (Structures)

The Company shall provide the information required on the 'Application for Departure From Standards DMRB Volumes 1 to 3 (Structures)' Proforma contained in Appendix 1.

## 11.2.4 Details of any proposed Departure shall be submitted to the Contracting Authority prior to any necessary Road Safety Audit Stage 2 being carried out. In this context the Company's attention is drawn to DMRB Volume 1, Section 0, Part 1, 'The Introduction to the DMRB' paragraph 1.17.

## 11.3 The relevant Overseeing Organisation staff shall consider the Company's proposed Departure and shall make a formal determination of the proposed Departure by approving or rejecting it. Approval may be conditional or unconditional. Such approval or rejection of a Departure submission shall be at the sole discretion of the relevant Overseeing Organisation.

## 11.4 The relevant Overseeing Organisation shall inform the Contracting Authority of the Departure determination.

## 11.5 The Contracting Authority shall inform the Company of the Departure determination. Notwithstanding any other provisions of this Agreement, the Company shall not commence any Works which affect the Design or Design Element of the New Works until this procedure is completed.

**12 Company Notice of Change**

## 12.1 Where the Company proposes to either vary the New Works Requirements or the Conceptual Design or the Design in accordance with Clause 35 of the Agreement, full details of the proposal shall be submitted to the Contracting Authority.

## 12.2 The Company shall submit to the Contracting Authority two copies of each Company Notice of Change Certificate with original signatures, together with a minimum of four hard copies and one pdf copy of all relevant documentation including drawings, other information and associated correspondence.

**13 Substantial Completion Certificate**

## Part 5: Certification

13.1 The Company shall submit two copies of the Substantial Completion Certificate with original signatures to the Contracting Authority in accordance with Clause 25 of the Agreement.

**14 Restricted Services Readiness Certificate and Full Services Readiness Certificate**

14.1 The Company shall submit two copies of the Restricted Services Readiness Certificate and the Full Services Readiness Certificate with original signatures to the Contracting Authority in accordance with Clause 24 of the Agreement.

**15 Final Completion Certificate**

15.1 The Company shall submit two copies of the Final Completion Certificate with original signatures to the Contracting Authority in accordance with Clause 26 of the Agreement.

**16 Temporary New Works Certificates**

16.1 Temporary New Works Certificates shall be required for all Temporary New Works associated with any Structure and for any other Temporary New Works which have or require to have a Design input.

The Company shall submit two copies of the Temporary New Works Certificate to the Contracting Authority with original signatures together with a minimum of four hard copies and one pdf copy of all relevant drawings and documents. One copy of each Certificate shall be returned to the Company within seven days of receipt, signed in acknowledgement by the Contracting Authority.

16.2 Each Temporary New Works Certificate submitted by the Company shall be signed by:

16.2.1 the Temporary New Works Design Checker;

16.2.2 the New Works Contractor; and

16.2.3 the Company.

**17 Traffic Scotland Site Acceptance Test Certificates**

17.1 Traffic Scotland test certificates shall be required for all Traffic Scotland equipment including, but not limited to:

17.1.1 the passive network; and

17.1.2 active equipment.

17.2 The Company shall submit two copies of the Traffic Scotland tests certificates to the Contracting Authority with original signatures together with a minimum of four hard copies and one pdf copy of all relevant documents and drawings.

One copy of each Certificate shall be returned to the Company within seven days of receipt, signed in acknowledgement by the Contracting Authority.

17.3 Each Traffic Scotland tests certificate submitted by the Company shall be signed by:

17.3.1 the Designer;

17.3.2 the New Works Contractor; and

17.3.3 the Company.

## Part 5: Certification

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- 17.4 The Operation of Traffic Scotland equipment and associated systems shall not commence until the testing and certification process for such shall have been completed satisfactorily as outlined within Part 3 of these New Works Requirements.
- 17.5 The Company shall ensure that testing and certification for Traffic Scotland equipment is completed incrementally throughout the Contract Period. The Company shall prepare a testing and certification plan for the approval of the Traffic Scotland Network Operations Manager.
- 17.6 The Company shall carry out the following tests in accordance with Part 3 of these New Works Requirements:
- 17.6.1 Pre-Issue Tests;
- 17.6.2 Stand Alone Site Acceptance Tests;
- 17.6.3 Pre Commissioning Site Acceptance Tests; and
- 17.6.4 Commissioning Site Acceptance Tests.
- 17.7 The procedures for the submission of certificates for Traffic Scotland tests certificates shall follow these New Works Requirements and the Company's testing and certification plan.
- 17.8 The Equipment Manual (601) and Maintenance Manual (602) provide typical testing and certification procedure for the Traffic Scotland equipment and system. The Transport Scotland Network Operations Manager shall advise the details of testing and certification three months prior to installation of each active equipment type.
- 17.9 The Company shall carry out the required tests for the passive network and active equipment in accordance with these New Works Requirements.

**18 Provenance Certificates**

- 18.1 Provenance Certificates shall be required for all native plant stock required by the Design.
- 18.2 Provenance Certificates signed by:
- 18.2.1 the Designer
- 18.2.2 the landscape Designer; and
- 18.2.3 the Company;
- and shall be provided by the Company for each batch of plants on delivery to the New Works Site.
- The Company shall submit to the Contracting Authority two copies of each Provenance Certificate with original signatures along with a minimum of four hard copies and one pdf copy of all relevant documents. One copy of each certificate shall be returned to the Company within seven days of receipt, signed in acknowledgement by the Contracting Authority.
- 18.3 The Company shall not commence the landscape planting until this procedure shall have been completed.



**APPENDIX 1 : CERTIFICATES**

## Part 5: Certification

**Certificates**

|                                                                                         |            |
|-----------------------------------------------------------------------------------------|------------|
| Design Certificate: Structures                                                          | DCS        |
| Design Check Certificate: Structures                                                    | DCCS       |
| Design Certificate: Earthworks                                                          | DCE( )     |
| Design Check Certificate: Earthworks                                                    | DCCE( )    |
| Design Certificate: Road Restraint System                                               | DCB        |
| Design Check Certificate: Road Restraint System                                         | DCCB       |
| Design Certificate: Other Part(s) of the Design or Design Element                       | DC( )      |
| Design Check Certificate: Other Part(s) of the Design or Design Element                 | DCC( )     |
| Design Interim Certificate: Structures                                                  | DICS       |
| Design Check Interim Certificate: Structures                                            | DCICS      |
| Design Interim Certificate: Earthworks                                                  | DICE( )    |
| Design Check Interim Certificate: Earthworks                                            | DCICE( )   |
| Design Interim Certificate: Road Restraint System                                       | DICB       |
| Design Check Interim Certificate: Road Restraint System                                 | DCICB      |
| Design Interim Certificate: Other Part(s) of the Design or Design Element               | DIC( )     |
| Design Check Interim Certificate: Other Part(s) of the Design or Design Element         | DCIC( )    |
| Interim Construction Certificate                                                        | ICC        |
| Final Construction Certificate                                                          | FCC        |
| Interim Defects Correction Certificate                                                  | IDCC       |
| Final Defects Correction Certificate                                                    | FDCC       |
| Consultation Certificate                                                                | CC         |
| Road Safety Audit Certificate                                                           | RSAC       |
| Stage 2 Road Safety Audit Certificate for Temporary Traffic Management                  | RSAC(TTM2) |
| Stage 3 Road Safety Audit Certificate for Temporary Traffic Management                  | RSAC(TTM3) |
| Application for Departure from Standards: DMRB Volumes 1, 2 and 3 (Structures) Proforma |            |
| Application for Departure from Standards: DMRB Volume 6 (Road Geometry) Proforma        |            |
| Cycle Audit Certificate                                                                 | CAC        |
| Company Notice of Change Certificate                                                    | CNCC       |
| Substantial Completion Certificate                                                      | SCC        |
| Restricted Services Readiness Certificate                                               | RSRC       |
| Full Services Readiness Certificate                                                     | SRC        |
| Final Completion Certificate                                                            | FCC        |
| Temporary New Works Certificate                                                         | TWC        |
| Traffic Scotland Pre-issue Tests Certificate                                            | TSPTC      |
| Traffic Scotland Stand Alone Site Acceptance Tests Certificate                          | TSSASATC   |

Part 5: Certification

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|                                                                      |         |
|----------------------------------------------------------------------|---------|
| Traffic Scotland Pre-commissioning Site Acceptance Tests Certificate | TSPSATC |
| Traffic Scotland Commissioning Site Acceptance Tests Certificate     | TSCSATC |
| Provenance Certificate                                               | PC      |
| Third Party Road Completion Certificate                              | TPRCC   |

**DESIGN CERTIFICATE: STRUCTURES**

**CERTIFICATE NO: DCS.....**

1 We hereby certify to the Contracting Authority in respect of the design of the following part of the Design or Design Element namely

..... (Name of Structure)

that reasonable professional skill and care has been taken by us with a view to securing that the part of the Design or Design Element:

- (i) complies with the New Works Requirements;
- (ii) has been designed in accordance with the required Design Basis documents listed and dated below;
- (iii) has been accurately translated into the construction drawings and bar bending schedules bearing the unique numbers listed below; and

(iv) is not detrimental to the whole Design or Design Element.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....

DESIGNER (Team Leader for Designer)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm.....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

**DESIGN CHECK CERTIFICATE: STRUCTURES**

**CERTIFICATE NO: DCCS.....**

1 We hereby certify to the Contracting Authority in respect of the check of the following part of the Design or Design Element namely

..... (Name of Structure)

that reasonable professional skill and care has been taken by us in carrying out the independent check of the part of the Design or Design Element in accordance with the procedures described in the DMRB with a view to securing that the part of the Design or Design Element:

- (i) complies with the New Works Requirements;
- (ii) has been checked in accordance with the required Design Basis documents listed and dated below;
- (iii) has been accurately translated into the construction drawings and bar bending schedules bearing the unique numbers listed below; and

(iv) is not detrimental to the whole Design or Design Element.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....  
DESIGN CHECKER (Team Leader for Design Checker)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm:.....  
NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....  
COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....  
on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

Part 5: Certification

**DESIGN CERTIFICATE: EARTHWORKS**

**CERTIFICATE NO: DCE( )\*.....**

1 We hereby certify to the Contracting Authority in respect of the design of the following part of the Design or Design Element namely

..... (Name of Earthwork's or Earthwork's Element)

that reasonable professional skill and care has been taken by us with a view to securing that the part of the Design or Design Element:

- i) complies with the New Works Requirements;
- ii) has been designed in accordance with the required Design Basis documents listed and dated below;
- iii) has been accurately translated into the construction drawings and other Design documents bearing the unique numbers listed below;
- iv) is not detrimental to the whole Design or Design Element; and
- v) has been the subject of a Geotechnical Design Report and that the conclusions of that report have been taken into account in the further divided part of the Design or Design Element.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....  
DESIGNER (Team Leader for Designer)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm.....  
NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....  
COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....  
on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

\* Insert Description of part of Design or Design Element:

|            |      |        |     |
|------------|------|--------|-----|
| Earthworks | (EW) | Piling | (P) |
| Grouting   | (G)  |        |     |

**DESIGN CHECK CERTIFICATE: EARTHWORKS**

**CERTIFICATE NO: DCCE( )\*.....**

1 We hereby certify to the Contracting Authority in respect of the check of the following part of the Design or Design Element namely

..... (Name of Earthworks or Earthworks Element)

that reasonable professional skill and care has been taken by us in carrying out the independent check of the Design or Design Element (including the interpretative geotechnical report referred to in (iv) below) with a view to securing that the part of the Design or Design Element:

- i) complies with the New Works Requirements;
- ii) has been checked in accordance with the required Design Basis documents listed and dated below;
- iii) has been accurately translated into the construction drawings and other Design documents bearing the unique numbers listed below;
- iv) is not detrimental to the whole Design or Design Element; and
- v) has been the subject of a Geotechnical Design Report and that the conclusions of that report have been taken into account in the further divided part of the Design or Design Element.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....

DESIGN CHECKER (Team Leader for the Design Checker)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm.....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

\* Insert Description of part of Design or Design Element:

|                |      |        |     |
|----------------|------|--------|-----|
| Earthworks     | (EW) | Piling | (P) |
| Grouting Works | (G)  |        |     |

**DESIGN CERTIFICATE: ROAD RESTRAINT SYSTEM**

**CERTIFICATE NO: DCB.....**

1 We hereby certify to the Contracting Authority in respect of the Design of the following part of the Design or Design Element namely

..... (Name of part of road restraint system or road restraint system Element)

- i) that reasonable professional skill and care has been taken by us with a view to securing that the part of the Design or Design Element:
- ii) complies with the New Works Requirements;
- iii) has been accurately translated into the construction drawings and other Design documents bearing the unique numbers listed below;
- iv) is not detrimental to the whole Design or Design Element; and
- v) that all aspects of the further divided part of the Design or Design Element of the road restraint systems on this Agreement have been developed by the use of a risk assessment approach.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....  
DESIGNER (Team Leader for the Designer)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm.....  
NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....  
COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....  
on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....



**DESIGN CHECK CERTIFICATE: ROAD RESTRAINT SYSTEMS**

**CERTIFICATE NO: DCCB.....**

1 We hereby certify to the Contracting Authority in respect of the check of the following part of the Design or Design Element namely

..... (Name of part of road restraint system or road restraint system element)

that reasonable professional skill and care has been taken by us in carrying out the independent check of the Design or Design with a view to securing that the part of the Design or Design Element:

- i) complies with the New Works Requirements;
- ii) has been accurately translated into the construction drawings and other Design documents bearing the unique numbers listed below;
- iii) is not detrimental to the whole Design or Design Element; and
- iv) that all aspects of the further divided part of the Design or Design Element of the road restraint systems on this Agreement have been developed by the use of a risk assessment approach.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....  
DESIGN CHECKER (Team Leader for the Design Checker)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....  
NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....  
COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....  
on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

**DESIGN CERTIFICATE: OTHER PART(S) OF THE DESIGN OR DESIGN ELEMENT**

**CERTIFICATE NO: DC( )\*.....**

1 We hereby certify to the Contracting Authority in respect of the Design of the following part of the Design or Design Element namely

..... (Name of part of the Design or Design Element)

that reasonable professional skill and care has been taken by us with a view to securing that the part of the Design or Design Element:

- i) complies with the New Works Requirements;
- ii) has been accurately translated into the construction drawings and other Design documents bearing the unique numbers listed below; and

iii) is not detrimental to the whole Design or Design Element.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....

DESIGNER (Team Leader for the Designer)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm.....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

\* Insert Description of part of Design or Design Element:

|                                    |     |                             |     |
|------------------------------------|-----|-----------------------------|-----|
| Fencing and Environmental Barriers | (F) | Electrical Installation     | (I) |
| Drainage                           | (D) | Traffic Scotland equipment  | (C) |
| Road Pavements                     | (P) | Environmental and Landscape | (E) |
| Road Layout                        | (R) | Undertakers                 | (U) |
| Kerb, Footways and Paved Areas     | (K) | Private Apparatus Owners    | (O) |
| Signs and Road Markings            | (S) | Accommodation Works         | (A) |
| Lighting                           | (L) |                             |     |

**DESIGN CHECK CERTIFICATE: OTHER PART(S) OF THE DESIGN OR DESIGN ELEMENT**

**CERTIFICATE NO: DCC( )\*.....**

1 We hereby certify to the Contracting Authority in respect of the check of the following part of the Design or Design Element namely

..... (Name of Design Element)

that reasonable professional skill and care has been taken by us in carrying out the independent check of the part of the Design or Design Element with a view to securing that the part of the Design or Design Element:

- i) complies with the New Works Requirements;
- ii) has been accurately translated into the construction drawings and other Design documents bearing the unique numbers listed below; and
- iii) is not detrimental to the whole Design or Design Element.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....

DESIGN CHECKER (Team Leader for the Design Checker)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm.....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

\* Insert Description of part of Design or Design Element:

|                                    |     |                             |     |
|------------------------------------|-----|-----------------------------|-----|
| Fencing and Environmental Barriers | (F) | Electrical Installation     | (I) |
| Drainage                           | (D) | Traffic Scotland equipment  | (C) |
| Road Pavements                     | (P) | Environmental and Landscape | (E) |
| Road Layout                        | (R) | Undertakers                 | (U) |
| Kerb, Footways and Paved Areas     | (K) | Private Apparatus Owners    | (O) |
| Signs and Road Markings            | (S) | Accommodation Works         | (A) |
| Lighting                           | (L) |                             |     |

**DESIGN INTERIM CERTIFICATE: STRUCTURES**

**CERTIFICATE NO: DICS.....**

1 We hereby certify to the Contracting Authority in respect of the Design of the following further divided part of the Design or Design Element namely:

..... (Name of further divided part of Structure)  
 ..... (Name of Structure)

that reasonable professional skill and care has been taken by us with a view to securing that the further divided part of the Design or Design Element:

- i) complies with the New Works Requirements;
- ii) has been designed in accordance with the required Design Basis documents listed and dated below;
- iii) has been accurately translated into the construction drawings and bar bending schedules bearing the unique numbers listed below; and
- iv) is not detrimental to the whole Design or Design Element and shall not affect the completion of the Design Certificate(s).

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....  
 DESIGNER (Team Leader for Designer)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm.....  
 NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....  
 COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....  
 on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

**DESIGN CHECK INTERIM CERTIFICATE: STRUCTURES**

**CERTIFICATE NO: DCICS.....**

1 We hereby certify to the Contracting Authority in respect of the check of the following further divided part for the Design or Design Element namely:

..... (Name of further divided part of Structure)  
..... (Name of Structure)

that reasonable professional skill and care has been taken by us with a view to securing that the further divided part of the Design or Design Element:

- i) complies with the New Works Requirements;
- ii) has been checked in accordance with the required Design Basis documents listed and dated below;
- iii) has been accurately translated into the construction drawings and bar bending schedules bearing the unique numbers listed below and
- iv) is not detrimental to the whole Design or Design Element and shall not affect the completion of the Check Certificate(s).

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....  
DESIGN CHECKER (Team Leader for the Design Checker)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm.....  
NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....  
COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

Part 5: Certification

**DESIGN INTERIM CERTIFICATE: EARTHWORKS**

**CERTIFICATE NO: DICE( )\*.....**

1 We hereby certify to the Contracting Authority in respect of the Design of the following further divided part of the Design or Design Element namely

..... (Name of further divided part of the earthworks)  
 ..... (Name of part of the earthworks or earthworks element)

that reasonable professional skill and care has been taken by us with a view to securing that the further divided part of the Design or Design Element:

- i) complies with the New Works Requirements;
- ii) has been designed in accordance with the required Design Basis documents listed and dated below;
- iii) has been accurately translated into the construction drawings and other design documents bearing the unique numbers listed below;
- iv) is not detrimental to the whole Design or Design Element and shall not affect the completion of the Design Certificate(s); and
- v) has been the subject of a Geotechnical Design Report and that the conclusions of that report have been taken into account in the further divided part of the Design or Design Element.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....

DESIGNER (Team Leader for the Designer)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm.....

NEW WORKS CONTRACTOR (Director)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

\* Insert Description of part of Design or Design Element:

Earthworks (EW) Piling (P)

**DESIGN CHECK INTERIM CERTIFICATE: EARTHWORKS**

**CERTIFICATE NO: DCICE( )\*.....**

1 We hereby certify to the Contracting Authority in respect of the check of the following further divided part of the Design or Design Element namely

..... (Name of further divided part of the earthworks)

..... (Name of part of the earthworks or earthworks element)

that reasonable professional skill and care has been taken by us in carrying out the independent check of the Design or Design Element (including the interpretive geotechnical report referred to in (iv) below) with a view to securing that the further divided part of the Design or Design Element:

- i) complies with the New Works Requirements;
- ii) has been checked in accordance with the required Design Basis documents listed and dated below;
- iii) has been accurately translated into the construction drawings and other Design documents bearing the unique numbers listed below;
- iv) is not detrimental to the whole Design or Design Element and shall not affect the completion of the Check Certificate(s); and
- v) has been the subject of a Geotechnical Design Report and that the conclusions of that report have been taken into account in the further divided part of the Design or Design Element.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement

Signed: ..... Firm: .....

DESIGN CHECKER (Team Leader for the Design Checker)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm.....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

\* Insert Description of part of Design or Design Element:

|            |      |        |     |
|------------|------|--------|-----|
| Earthworks | (EW) | Piling | (P) |
| Grouting   | (G)  |        |     |

**DESIGN INTERIM CERTIFICATE: ROAD RESTRAINT SYSTEMS**

**CERTIFICATE NO: DIC(B).....**

1 We hereby certify to the Contracting Authority in respect of the Design of the following further divided part of the Design or Design Element namely

..... (Name of further divided part of the road restraint system or road restraint system element)

..... (Name of part of the road restraint system or road restraint system element)

that reasonable professional skill and care has been taken by us with a view to securing that the further divided part of the Design or Design Element:

- i) complies with the New Works Requirements;
- ii) has been accurately translated into the construction drawings and other Design documents bearing the unique numbers listed below;
- iii) is not detrimental to the whole Design or Design Element shall not affect the completion of the Design Certificate(s); and
- iv) that all aspects of the further divided part of the Design or Design Element of the road restraint systems on this Agreement have been developed by the use of a risk assessment approach.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....

DESIGNER (Team Leader fro Designer)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm.....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....



**DESIGN CHECK INTERIM CERTIFICATE: ROAD RESTRAINT SYSTEMS**

**CERTIFICATE NO: DCIC(B).....**

1 We hereby certify to the Contracting Authority in respect of the check of the following further divided part of the Design or Design Element namely

..... (Name of further divided part of the road restraint system or road restraint system element)

..... (Name of part of the road restraint system or road restraint system element)

that reasonable professional skill and care has been taken by us in carrying out the independent check of the Design or Design Element with a view to securing that the further divided part of the Design or Design Element:

- i) complies with the New Works Requirements;
- ii) has been accurately translated into the construction drawings and other Design documents bearing the unique numbers listed below;
- iii) is not detrimental to the whole Design or Design Element and shall not affect the completion of the Check Certificate(s); and
- iv) that all aspects of the further divided part of the Design or Design Element of the road restraint systems on this Agreement have been developed by the use of a risk assessment approach.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....

DESIGN CHECKER (Team Leader for the Design Checker)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm.....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

Part 5: Certification

**DESIGN INTERIM CERTIFICATE: OTHER PART(S) OF THE DESIGN OR DESIGN ELEMENT**

**CERTIFICATE NO: DIC( )\*.....**

1 We hereby certify to the Contracting Authority in respect of the Design of the following further divided part of the Design or Design Element namely

..... (Name of further divided part of Design or Design Element)  
..... (Name of part of Design or Design Element)

that reasonable professional skill and care has been taken by us with a view to securing that the further divided part of the Design or Design Element:

- i) complies with the New Works Requirements;
- ii) has been accurately translated into the construction drawings and other Design documents bearing the unique numbers listed below; and
- iii) is not detrimental to the whole Design or Design Element and shall not affect the completion of the Design Certificate(s).

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....

DESIGNER (Team Leader for the Designer)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm.....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

\* Insert Description of part of Design or Design Element:

|                                    |     |                             |     |
|------------------------------------|-----|-----------------------------|-----|
| Fencing and Environmental Barriers | (F) | Electrical Installation     | (I) |
| Drainage                           | (D) | Traffic Scotland equipment  | (C) |
| Road Pavements                     | (P) | Environmental and Landscape | (E) |
| Road Layout                        | (R) | Undertakers                 | (U) |
| Kerb, Footways and Paved Areas     | (K) | Private Apparatus Owners    | (O) |
| Signs and Road Markings            | (S) | Accommodation Works         | (A) |
| Lighting                           | (L) |                             |     |

Part 5: Certification

**DESIGN CHECK INTERIM CERTIFICATE: OTHER PART(S) OF THE DESIGN OR DESIGN ELEMENT**

**CERTIFICATE NO: DCIC( )\*.....**

1 We hereby certify to the Contracting Authority in respect of the check of the following further divided part of the Design or Design Element namely

..... (Name of further divided part of Design or Design Element)

..... (Name of part of Design or Design Element)

that reasonable professional skill and care has been taken by us in carrying out the independent check of the Design or Design Element with a view to securing that the further divided part of the Design or Design Element:

- i) complies with the New Works Requirements;
- ii) has been accurately translated into the construction drawings and other Design documents bearing the unique numbers listed below; and

iii) is not detrimental to the whole Design or Design Element and shall not affect the completion of the Check Certificate(s).

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....

DESIGN CHECKER (Team Leader for the Design Checker)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm.....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

\* Insert Description of part of Design or Design Element:

|                                    |     |                             |     |
|------------------------------------|-----|-----------------------------|-----|
| Fencing and Environmental Barriers | (F) | Electrical Installation     | (I) |
| Drainage                           | (D) | Traffic Scotland equipment  | (C) |
| Road Pavements                     | (P) | Environmental and Landscape | (E) |
| Road Layout                        | (R) | Undertakers                 | (U) |
| Kerb, Footways and Paved Areas     | (K) | Private Apparatus Owners    | (O) |
| Signs and Road Markings            | (S) | Accommodation Works         | (A) |
| Lighting                           | (L) |                             |     |

**INTERIM CONSTRUCTION CERTIFICATE**

**CERTIFICATE NO: ICC .....**

This certificate is in respect of the period from .....to.....

1 We hereby certify to the Contracting Authority that we have supervised the construction of the New Works during the period to which this certificate relates and that we have exercised reasonable professional skill and care with a view to securing that the parts of the New Works set out below have been constructed in accordance with the requirements of the Design.

The parts of the New Works referred to in this certificate are:

.....  
.....  
.....

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: .....  
DESIGNER (Team Leader for the Designer)

Firm: .....

Name (Block Capitals): .....

Date: .....

Signed: .....  
NEW WORKS CONTRACTOR (Agent)

Firm: .....

Name (Block Capitals): .....

Date: .....

Signed: .....  
COMPANY (Director)

Firm: .....

Name (Block Capitals): .....

Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....  
on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): .....

Date: .....

**FINAL CONSTRUCTION CERTIFICATE**

**CERTIFICATE NO: FCC.....**

1 We hereby certify to the Contracting Authority that we have supervised with reasonable professional skill and care the construction and completion of the Design or Design Element namely:

..... (Name of Design or Design Element)

with a view to securing that it has been constructed in accordance with the requirements of the Design.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....

DESIGNER (Team Leader for the Designer)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

**INTERIM DEFECT CORRECTION CERTIFICATE**

**CERTIFICATE NUMBER IDCC.....**

This certificate is in respect of the period from.....to..... within the Defects Liability Period.

1 We hereby certify to the Contracting Authority that we have supervised the correction of defects of the relevant parts of the New Works during the period to which this certificate relates and that we have exercised reasonable professional skill and care with a view to securing that parts of the New Works set out below have been corrected to accord with the Design.

The parts of the New Works referred to in this certificate are:

.....  
.....  
.....  
.....  
.....  
.....

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: .....

Firm: .....

DESIGNER (Team Leader for the Designer)

Name (Block Capitals): .....

Date: .....

Signed: .....

Firm: .....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): .....

Date: .....

Signed: .....

Firm: .....

COMPANY (Director)

Name (Block Capitals): .....

Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): .....

Date: .....

**FINAL DEFECT CORRECTION CERTIFICATE**

**CERTIFICATE NUMBER FDCC.....**

1 We hereby certify to the Contracting Authority in respect of

..... (Name of part of the Design or Design Element)

that we have supervised with reasonable professional skill and care the correction of Defects within the Defects Liability Period with a view to securing that it has been corrected to accord with the requirements of the Design.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....

DESIGNER (Team Leader for the Designer)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

Part 5: Certification

**CONSULTATION CERTIFICATE**

**CERTIFICATE NUMBER: CC.....**

CONSULTATION WITH ..... (Name of Consultee)

3 We hereby certify to the Contracting Authority in respect of :

.....(Name of part of Design or Design Element)

that we have consulted with ..... (Name of Consultee)

and have ascertained that they have no objections to the part of Design or Design Element as described on the documents listed in Part 2 below.

We further hereby certify that the above named part of the Design or Design Element complies with the New Works Requirements and or the requirements for the Contracting Authority' acceptance of any change to or non-compliance with the New Works Requirements has been brought to the attention of the consultee named below and is included in the documents listed in Part 2 below.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....

DESIGNER (Team Leader for Designer)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

4 LIST OF DOCUMENTS

5 DECLARATION BY ..... (Name of Consultee)

On behalf of .....I confirm that:

- (i) consultations referred to above have been completed,
- (ii) ..... (Name of Consultee) has no objection to the Design or Design Element as described on the documents listed in Part 2 above, and
- (iii) the documents listed in Part 2 above meet our overall requirements and that the Company remains responsible for ensuring that the above named part of the Design or Design Element complies with the New Works Requirements and the Agreement..

Signed: ..... Date: .....

Name (Block Capitals): .....

(duly authorised to sign on behalf of .....) (Name of Consultee)

6 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....



**ROAD SAFETY AUDIT CERTIFICATE**

**CERTIFICATE NUMBER: RSAC.....**

This certificate refers to the Stage.....\*\* Road Safety Audit applicable to zone of interest number .....

1 We hereby certify to the Contracting Authority that all the safety issues raised in the audit report have been addressed by:

(i)\* incorporating all / some\* of the recommendations of the audit report in the Design or Design Element (Reference: .....\*\*);

and\*

(ii)\* adopting alternative solutions that have been agreed with the Safety Audit Team and have been incorporated in the Design or Design Element (Reference: .....\*\*);

and\*

(iii)\* incorporating in the Design or Design Element the decision of the arbitrator (as defined in the DMRB) with respect to the issues detailed in the Exception Report (Reference: .....\*\*).

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: .....

Firm: .....

DESIGNER (Team Leader for the Designer)

Name (Block Capitals): .....

Date: .....

Signed: .....

Firm: .....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): .....

Date: .....

Signed: .....

Firm: .....

COMPANY (Director)

Name (Block Capitals): .....

Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): .....

Date: .....

\* delete as appropriate

\*\* Insert appropriate references

\*\*\* Insert report and/or associated correspondence references and report item numbers

**STAGE 2 ROAD SAFETY AUDIT CERTIFICATE FOR TEMPORARY TRAFFIC MANAGEMENT SCHEMES**

**CERTIFICATE NUMBER: RSAC(TTM2).....**

This Certificate refers to the Stage 2 Road Safety Audit of the Temporary Traffic Management Scheme(s)\* referred to on Drawing Number(s) .....\*\*

- 1 We hereby certify to the Contracting Authority that all the safety issues raised in the audit report have been addressed by:
  - (i)\* incorporating all / some\* of the recommendations of the audit report in the Design or Design Element (Reference: .....\*\*\*);  
and\*
  - (ii)\* adopting alternative solutions that have been agreed with the Safety Audit Team and have been incorporated in the Design or Design Element (Reference: .....\*\*\*);  
and\*
  - (iii)\* incorporating in the Design or Design Element the decision of the arbitrator (as defined in the DMRB) with respect to the issues detailed in the Exception Report (Reference: .....\*\*\*).

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

|                                         |             |
|-----------------------------------------|-------------|
| Signed: .....                           | Firm: ..... |
| DESIGNER (Team Leader for the Designer) |             |

|                              |             |
|------------------------------|-------------|
| Name (Block Capitals): ..... | Date: ..... |
|------------------------------|-------------|

|                              |             |
|------------------------------|-------------|
| Signed: .....                | Firm: ..... |
| NEW WORKS CONTRACTOR (Agent) |             |

|                              |             |
|------------------------------|-------------|
| Name (Block Capitals): ..... | Date: ..... |
|------------------------------|-------------|

|                    |             |
|--------------------|-------------|
| Signed: .....      | Firm: ..... |
| COMPANY (Director) |             |

|                              |             |
|------------------------------|-------------|
| Name (Block Capitals): ..... | Date: ..... |
|------------------------------|-------------|

2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

|                              |             |
|------------------------------|-------------|
| Name (Block Capitals): ..... | Date: ..... |
|------------------------------|-------------|

\* delete as appropriate

\*\* Insert appropriate references

\*\*\* Insert report and/or associated correspondence references and report item numbers

**STAGE 3 ROAD SAFETY AUDIT CERTIFICATE FOR TEMPORARY TRAFFIC MANAGEMENT SCHEMES**

**CERTIFICATE NUMBER: RSAC(TTM3).....**

This Certificate refers to the Stage 3 Road Safety Audit of the Temporary Traffic Management Scheme(s) referred to on Drawing Number(s) .....\*\*

- 1 We hereby certify to the Contracting Authority that all the safety issues raised in the audit report have been addressed by:
- (i)\* incorporating all / some\* of the recommendations of the audit report in the Design or Design Element (Reference: .....\*\*);  
and\*
  - (ii)\* adopting alternative solutions that have been agreed with the Safety Audit Team and have been incorporated in the Design or Design Element (Reference: .....\*\*);  
and\*
  - (iii)\* incorporating in the Design or Design Element the decision of the arbitrator (as defined in the DMRB) with respect to the issues detailed in the Exception Report (Reference: .....\*\*).

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

|                                         |             |
|-----------------------------------------|-------------|
| Signed: .....                           | Firm: ..... |
| DESIGNER (Team Leader for the Designer) |             |

|                              |             |
|------------------------------|-------------|
| Name (Block Capitals): ..... | Date: ..... |
|------------------------------|-------------|

|                              |             |
|------------------------------|-------------|
| Signed: .....                | Firm: ..... |
| NEW WORKS CONTRACTOR (Agent) |             |

|                              |             |
|------------------------------|-------------|
| Name (Block Capitals): ..... | Date: ..... |
|------------------------------|-------------|

|                    |             |
|--------------------|-------------|
| Signed: .....      | Firm: ..... |
| COMPANY (Director) |             |

|                              |             |
|------------------------------|-------------|
| Name (Block Capitals): ..... | Date: ..... |
|------------------------------|-------------|

2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

|                              |             |
|------------------------------|-------------|
| Name (Block Capitals): ..... | Date: ..... |
|------------------------------|-------------|

\* delete as appropriate

\*\* Insert appropriate references

\*\*\* Insert report and/or associated correspondence references and report item numbers

**Application for Departure from Standards  
DMRB Volumes 1, 2 and 3 (Structures) Proforma**

DEPARTURE FROM STANDARDS  
(Bridges and other Highway Structures)

Name of Project \_\_\_\_\_

Name of Bridge or Structure \_\_\_\_\_

Structure Reference Number \_\_\_\_\_

**APPLICANT** : \_\_\_\_\_

**PROJECT TITLE** : \_\_\_\_\_

**DEPARTURE NUMBER** : \_\_\_\_\_

**STRUCTURE REFERENCE** : \_\_\_\_\_

**SUBMISSION DATE** : \_\_\_\_\_

|                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>1. List of Supporting Documentation:</b></p> <p>Standards:</p><br><p>Drawings:</p><br><p>Other:</p>                                                                                                                     |
| <p><b>2. Description of Proposed Departure:</b></p> <p>(Include details of DMRB Standards and Clause numbers which are being departed from)</p>                                                                               |
| <p><b>3. Designer/Assessor Justification:</b></p> <p>(Include reasons why existing DMRB Standards are inappropriate)</p>                                                                                                      |
| <p><b>4. Cost Implications:</b></p> <p>(Include an estimate of cost savings to the Contracting Authority as well as the effect on future maintenance costs)</p> <p>4.1 Construction Costs</p><br><p>4.2 Maintenance Costs</p> |

## Part 5: Certification

DEPARTURE FROM STANDARDS  
(Bridges and other Highway Structures)

Name of Project \_\_\_\_\_

Name of Bridge or Structure \_\_\_\_\_

Structure Reference Number \_\_\_\_\_

**5. Applicant Design Team Leader Declaration:**

I declare that reasonable professional skill and care have been exercised in the preparation of this Application for Departure from Standards submission.

Signed:

Name:

Date:

**6. AWPR Contracting Authority Comments and Recommendation::**

Signed:

Name:

Date:

**7. Transport Scotland Bridges Branch Comments and Recommendation:**

The above Application for Departure from Standards is Approved/Rejected

Signed:

Name:

Date:

**8. Transport Scotland Chief Bridges Engineer Recommendation**

The above Departure is approved / rejected.

Signed:

Name:

Date:

**Application for Departure from Standards  
DMRB Volume 6 (Road Geometry) Proforma**

**APPLICANT:**

.....

**PROJECT TITLE:**

.....

**DEPARTURE NUMBER :**

.....

| <b>PROJECT DETAILS</b>               |  |
|--------------------------------------|--|
| General description of project       |  |
| Route Strategy                       |  |
| Road Category and Type               |  |
| Proposed Carriageway Cross Section   |  |
| Design Speed Proposed                |  |
| Future Traffic Flows and Composition |  |

| <b>DESCRIPTION OF DEPARTURE</b>      |  |
|--------------------------------------|--|
| Location and Chainage                |  |
| Departure Type                       |  |
| DMRB Reference                       |  |
| Required Standard                    |  |
| Standard Provided                    |  |
| Associated Departures or Relaxations |  |
| Drawing Numbers                      |  |

Part 5: Certification

**APPLICANT** : .....  
**PROJECT TITLE** : .....  
**DEPARTURE NUMBER** : .....

| <b>JUSTIFICATION</b>   |  |
|------------------------|--|
| Detailed Justification |  |
| Safety Implications    |  |
| Structural Integrity   |  |

| <b>ESSENTIAL COMPENSATORY MEASURES</b> |  |
|----------------------------------------|--|
| Compensatory Measures                  |  |

**TRUNK ROAD CYCLE AUDIT CERTIFICATE**

**CERTIFICATE NUMBER: CAC.....**

This certificate refers to the Stage 2 Trunk Road Cycle Audit

- 1 We hereby certify to the Contracting Authority that all the issues raised in the audit report have been addressed by:
  - (i)\* incorporating all / some\* of the recommendations of the audit report in the Design; and\*
  - (ii)\* adopting alternative solutions that have been agreed with the audit team and have been incorporated in the Design;

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in this Agreement between the Contracting Authority and the Company.

Signed: ..... Firm: .....

DESIGNER (Team Leader for the Designer)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

- 2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

\* Insert report and/or associated correspondence references and report item numbers



**COMPANY NOTICE OF CHANGE CERTIFICATE**

**CERTIFICATE NUMBER: CNCC.....**

- 1 The following Company Change is proposed under Clause 35 of this Agreement to vary the New Works Requirements / Conceptual Design / Design\* as detailed in the accompanying documents bearing the unique numbers listed below:

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: .....

Firm: .....

COMPANY (Director)

Name (Block Capitals): .....

Date: .....

\* delete as appropriate

**SUBSTANTIAL COMPLETION CERTIFICATE**

**CERTIFICATE NUMBER: SCC.....**

1 We hereby certify to the Contracting Authority that the New Works (or such Phase of the New Works) comprising:

.....  
.....  
.....

(Description of New Works)

have been substantially completed in accordance with this Agreement and that a Stage 3 Road Safety Audit Certificate (where appropriate) in respect of the New Works [or such Phases of the New Works] has been completed.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: .....

Firm: .....

COMPANY (Director)

Name (Block Capitals): .....

Date: .....

**THIRD PARTY ROAD COMPLETION CERTIFICATE**

**CERTIFICATE NUMBER: TPRCC.....**

1 We hereby certify to the Contracting Authority that the New Works comprising:

.....  
.....  
.....

(Description of New Works)

have been completed in accordance with this Agreement and that a Stage 3 Road Safety Audit Certificate (where appropriate) in respect of the New Works has been completed.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: .....

Firm: .....

COMPANY (Director)

Name (Block Capitals): .....

Date: .....

**RESTRICTED SERVICES READINESS CERTIFICATE**

**CERTIFICATE NUMBER: RSRC.....**

- 1 We hereby certify to the Contracting Authority that:
  - (i) all facilities are in place in relation to all roads subject to Restricted Services in accordance with the list of criteria specified below to fulfil the O&M Works Requirements as specified in Schedule 4 of this Agreement and/or the O&M Manual; and
  - (ii) the parts of the Quality Plan concerning the management of the O&M Works and the carrying out of the O&M Works have been completed in accordance with the requirements of Schedule 5.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....  
 COMPANY (Director)  
 Name (Block Capitals): ..... Date: .....

**Restricted Services Readiness Certificate - List of Criteria**

- 1 The Company has contingency arrangements in place to supply winter maintenance services beyond the Restricted Services Commencement Date.
- 2 The Company have SMS, IRIS and compliant RMMS systems, including inventory records and survey procedures, in place.
- 3 Connections to RMMS, SMS and IRIS systems for the Contracting Authority and/or the Company as appropriate are in place.
- 4 The Company has arrangements in place with regard to superintendence of the O&M Works.
- 5 An O&M Works Contractor has been appointed.
- 6 A procedure for directing the O&M Works Contractor has been agreed.
- 7 A compliant Quality System, Quality Manual, Quality Plan(s) and O&M Manual are ready to be implemented.
- 8 A schedule of inspections, aligned with incumbent’s schedule as appropriate, has been agreed.
- 9 The development of the Winter Maintenance Plan has been substantially completed.
- 10 An Emergency Response Plan has been agreed and is ready to be implemented.
- 11 An up to date schedule of liaison contacts has been agreed.
- 12 Liaison procedures with Emergency Services have been agreed.

**FULL SERVICES READINESS CERTIFICATE**

**CERTIFICATE NUMBER: SRC.....**

1 We hereby certify to the Contracting Authority that:

- (iii) all facilities are in place on the Project Roads to fulfil the O&M Works Requirements as specified either in Schedule 4 or the O&M Works Manual; and
- (iv) the parts of the Quality Plan concerning the management of the O&M Works and the carrying out of the O&M Works have been completed in accordance with the requirements of Schedule 5.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: .....

Firm: .....

COMPANY (Director)

Name (Block Capitals): .....

Date: .....

**FINAL COMPLETION CERTIFICATE**

**CERTIFICATE NUMBER: FCC.....**

1 We hereby certify to the Contracting Authority that the New Works comprising:

.....

.....

.....

(Description of New Works)

have achieved final completion in accordance with this Agreement and that all Design, Design Check and Construction Certificates in respect of the New Works [or such Phases of the New Works] have been issued.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: .....

Firm: .....

COMPANY (Director)

Name (Block Capitals): .....

Date: .....

**TEMPORARY NEW WORKS CERTIFICATE**

**CERTIFICATE NUMBER: TWC.....**

1 We hereby certify to the Contracting Authority that the preparation of the Design of the temporary New Works comprising

..... (Description of temporary New Works)

has been carried out with reasonable professional skill and care with a view to securing that:

- (i) it has been designed in accordance with the following standards; and
- (ii) the Design has been successfully translated into temporary New Works drawings bearing the unique numbers:

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

We have carried out an independent check of the New Works Contractor's proposals with reasonable professional skill and care with a view to securing that they are satisfactory for the proper discharge of his responsibilities under this Agreement for the safety of the said parts of the Works and without detriment to the New Works.

Signed: ..... Firm: .....

TEMPORARY NEW WORKS CHECKER (Team Leader for the temporary New Works checker)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

**TRAFFIC SCOTLAND PRE-ISSUE TEST CERTIFICATE**

**CERTIFICATE NUMBER: TSPTC.....**

1 We hereby certify to the Contracting Authority in respect of:

..... (Name of part of Design or Design Element)

that we have witnessed and accept the pre issue tests to confirm that the new Traffic Scotland equipment complies with the requirements of the Design as described in this Agreement, drawings and instation and site equipment certificates listed in Part 2 below.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....

DESIGNER (Team Leader for the Designer)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 LIST OF DOCUMENTATION, DRAWINGS AND CERTIFICATES

3 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....



**TRAFFIC SCOTLAND STAND ALONE SITE ACCEPTANCE TESTS CERTIFICATE**

**CERTIFICATE NUMBER: TSSASATC.....**

1 We hereby certify to the Contracting Authority in respect of :

..... (Name of part of Design or Design Element)

that we have carried out stand alone site acceptance tests to confirm that the new Traffic Scotland equipment complies with the requirements of the Design as described in this Agreement, drawings and instation and site equipment certificates listed in Part 2 below.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....

DESIGNER (Team Leader for the Designer)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 LIST OF DOCUMENTATION, DRAWINGS AND CERTIFICATES

3 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

**TRAFFIC SCOTLAND PRE-COMMISSIONING SITE ACCEPTANCE TESTS CERTIFICATE**

**CERTIFICATE NUMBER: TSPSATC.....**

1 We hereby certify to the Contracting Authority in respect of:

..... (Name of part of Design or Design Element)

that we have carried out pre-commissioning site acceptance tests to confirm that the new Traffic Scotland equipment complies with the requirements of the Design as described in the Agreement, drawings and instation and site equipment certificates listed in Part 2 below.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....

DESIGNER (Team Leader for the Designer)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 LIST OF DOCUMENTATION, DRAWINGS AND CERTIFICATES

3 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

**TRAFFIC SCOTLAND COMMISSIONING SITE ACCEPTANCE TESTS CERTIFICATE**

**CERTIFICATE NUMBER: TSCSATC.....**

1 We hereby certify to the Contracting Authority in respect of:

..... (Name of part of Design or Design Element)

that we have carried out commissioning site acceptance tests to confirm that the new Traffic Scotland equipment complies with the requirements of the Design as described in the Agreement, drawings and instation and site equipment certificates listed in Part 2 below.

We agree that the words and phrases herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement.

Signed: ..... Firm: .....

DESIGNER (Team Leader for the Designer)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

NEW WORKS CONTRACTOR (Agent)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 LIST OF DOCUMENTATION, DRAWINGS AND CERTIFICATES

3 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

**PROVENANCE CERTIFICATE**

**CERTIFICATE NO: PC.....**

1 We hereby certify that the provenance/origin of the United Kingdom native plant stock incorporated in the New Works are as identified in the plant schedule contained in Annex 1 of this certificate.

We agree that the words and phrases, herein, unless otherwise stated, have the same meaning as attributed to them in the Agreement, including Cost Effective Landscape: Learning from Nature (Scottish Executive Publication February 1998).

Signed: ..... Firm: .....

DESIGNER (Team Leader for Designer)

Name (Block Capitals):..... Date: .....

Signed: ..... Firm: .....

LANDSCAPE DESIGNER (Team Leader for Landscape Designer)

Name (Block Capitals): ..... Date: .....

Signed: ..... Firm: .....

COMPANY (Director)

Name (Block Capitals): ..... Date: .....

2 Receipt of this certificate is acknowledged

Signed: .....

on behalf of the CONTRACTING AUTHORITY

Name (Block Capitals): ..... Date: .....

Part 5: Certification

**ANNEX 1 TO PROVENANCE CERTIFICATE**

**CERTIFICATE NO: PC .....**

| BOTANICAL NAME | QUANTITY | FORM/AGE | HEIGHT (CM) | ZONE OF PROVENANCE AND LOCATION | APPROXIMATE DATE PROPAGATION MATERIAL COLLECTED | NURSERY OR NURSERIES AT WHICH THE PLANTS HAVE BEEN GROWN |
|----------------|----------|----------|-------------|---------------------------------|-------------------------------------------------|----------------------------------------------------------|
|                |          |          |             |                                 |                                                 |                                                          |
|                |          |          |             |                                 |                                                 |                                                          |
|                |          |          |             |                                 |                                                 |                                                          |
|                |          |          |             |                                 |                                                 |                                                          |
|                |          |          |             |                                 |                                                 |                                                          |
|                |          |          |             |                                 |                                                 |                                                          |
|                |          |          |             |                                 |                                                 |                                                          |
|                |          |          |             |                                 |                                                 |                                                          |

**THIN SURFACE COURSE SYSTEM APPROVAL CERTIFICATE**

|                                                                 |                                 |                                           |                           |                                    |
|-----------------------------------------------------------------|---------------------------------|-------------------------------------------|---------------------------|------------------------------------|
| <b>Application for use of proprietary surface course system</b> |                                 |                                           |                           |                                    |
| <b>Operating Company :</b>                                      |                                 | <b>OC Project Manager:</b>                |                           |                                    |
|                                                                 |                                 | <b>OC Project Manager e-mail Address:</b> |                           |                                    |
| <b>Contract</b>                                                 |                                 |                                           |                           |                                    |
| <b>Scheme ID number</b>                                         | <b>Work Code</b>                | <b>PMS Category</b>                       | <b>Work Year</b>          | <b>Contract Name</b>               |
| <b>Transport Scotland management</b>                            |                                 | <b>Management arrangements</b>            |                           | <b>Contract arrangement</b>        |
| <b>Asphalt Sub Contractor</b>                                   |                                 | <b>Laying Contractor</b>                  |                           | <b>Lane Rental ?</b>               |
| <b>Site</b>                                                     |                                 |                                           |                           |                                    |
| <b>Site description</b>                                         | <b>Speed Limit</b>              | <b>Works type</b>                         | <b>PSV</b>                | <b>Distance from Plant to Site</b> |
| <b>System Proposal</b>                                          |                                 |                                           |                           |                                    |
| <b>System name</b>                                              | <b>Maintenance period</b>       | <b>Description</b>                        | <b>Tack / Bond Coat</b>   |                                    |
| <b>Proposed production plant</b>                                | <b>BBA / HAPAS Certified</b>    |                                           |                           | <b>Material being replaced</b>     |
| <b>System History</b>                                           |                                 |                                           |                           |                                    |
| <b>Previous use</b>                                             | <b>Details of authorisation</b> |                                           |                           | <b>Additional remarks</b>          |
| <b>Transport Scotland scheme specific approval</b>              |                                 |                                           |                           |                                    |
|                                                                 | <b>Yes / No</b>                 |                                           |                           |                                    |
|                                                                 |                                 | <b>Comments:</b>                          | <b>To be completed by</b> | <b>Operating Company</b>           |
| <b>Signed:</b>                                                  |                                 |                                           |                           | <b>Contractor</b>                  |
| <b>Date:</b>                                                    |                                 |                                           |                           | <b>Transport Scotland</b>          |

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Aberdeen Western Peripheral Route / Balmedie-Tipperty  
AWPR/B-T Managing Agent, Aberdeen Business Centre,  
Willowbank House, Willowbank Road, Aberdeen AB11 6YG

Tel: **01224 332322** | Fax: **01224 322 361**

Email: [enquiries@awpr.co.uk](mailto:enquiries@awpr.co.uk) | Web: [www.awpr.co.uk](http://www.awpr.co.uk)

*Working in partnership*



# Aberdeen Western Peripheral Route / Balmedie - Tippetty

Competition for the Design, Build, Finance and Operation of the  
Aberdeen Western Peripheral Route / Balmedie - Tippetty

Volume Five

Schedule 2: New Works Requirements

Part 6: Reports, Information and Records

709/ACP/600

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**SCHEDULE 2: NEW WORKS REQUIREMENTS**  
**PART 6: REPORTS, INFORMATION AND RECORDS**

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**SCHEDULE 2: NEW WORKS REQUIREMENTS**  
**PART 6: REPORTS, INFORMATION AND RECORDS**

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## 1. General

### 1.1. Required Reports

The Company shall submit to the Contracting Authority the reports specified in such number and at the times required by this Agreement. When there is a conflict between the requirements of this Part 6 of these New Works Requirements and a requirement stated elsewhere in this Agreement, the latter shall take precedence.

### 1.2. Form

Such reports shall be in such form as reasonably required by the Contracting Authority, or where a report is required to be submitted periodically in the same form as such report was previously submitted until otherwise required by the Contracting Authority.

### 1.3. Further Information

The Company shall at any time and from time to time at its own cost provide to the Contracting Authority such further information relating to the Operations or otherwise as the Contracting Authority may reasonably require.

### 1.4. Objections to Reports

1.4.1. If the Contracting Authority considers that any report either has not been compiled in accordance with the provisions of this Agreement or has been based on erroneous information or data, then within 20 Business Days of receipt, the Contracting Authority may serve a notice to that effect on the Company.

1.4.2. If any such objection has not been resolved to the satisfaction of the Contracting Authority within 14 days after the service of a notice as detailed in paragraph 1.4.1, then the Contracting Authority may refer the matter to the Dispute Resolution Procedure.

### 1.5. Revisions to Reports

If either the resolution (whether by agreement or determination under the Dispute Resolution Procedure) of any objection made pursuant to paragraph 1.4.1 or the correction of any calculation in relation to the provisions of Schedule 6 requires any revision or adjustment to any report, then the Company shall as soon as practicable issue revised versions of each affected report and such revised report shall for the purposes of this Agreement take the place of the original report.

## 2. Records

### 2.1. Required Records

2.1.1. The Company shall produce, maintain and update all records required by this Agreement including without limitation those set out below.

2.1.2. The Contracting Authority shall within 60 days after the Effective Date deliver up to the Company a copy of the existing records of Transport Scotland in respect of the existing Trunk Roads which are identified as O&M Roads. The Company shall retain such records in safe storage at its own cost and such records shall thereafter be treated for all purposes as though they were records referred to in paragraph 2.1.1.

### 2.2. Audit

---

The records referred to in paragraph 2.1 shall be kept in good order and in such form as to be capable of audit (including by electronic means) by the Contracting Authority.

The Company shall make such records available for inspection (on receipt of reasonable notice) by the Contracting Authority at all times during normal working hours on Business Days in accordance with Clause 74.

### 2.3. Copies

The Company shall provide at its own cost a copy of any records reasonably requested by the Contracting Authority at the place where the records are kept and within the time period for delivery of the records reasonably required by the Contracting Authority, including such records retained under paragraph 2.4.4.

### 2.4. Retention of Records

2.4.1. All records referred to in paragraph 2.1 shall be retained in accordance with Schedule 18 to the Project Agreement.

2.4.2. Where the period for the retention of any records has expired, then the Company shall notify the Contracting Authority as to what it intends to do with such records in accordance with Schedule 18 of the Project Agreement

2.4.3. Upon termination of this Agreement, the Company shall at its own cost deliver up to the Contracting Authority in the manner and at the location as the Contracting Authority shall specify all such records as are referred to in paragraph 2.1 which were in existence at the Termination Date (or, where those records are required by statute to remain with the Company, copies thereof) or such part of such records as the Contracting Authority may by notice to the Company specify. The Contracting Authority shall make available to the Company all the records the Company delivers up pursuant to this paragraph 2.4.3, subject to reasonable notice.

2.4.4. The Company shall retain in safe storage for a period of not less than 6 years following the termination of this Agreement all such records as are referred to in paragraph 2.4.3 which the Contracting Authority do not require to be delivered up to them. The costs of retaining those records in safe storage shall be as specified in Schedule 18 of the Project Agreement.

### 2.5. Computer Records

2.5.1 To the extent that the records of the Company shall be created or maintained on a computer or other electronic storage device, then the Company shall meet with and adhere to the requirements of the Contracting Authority for a procedure for back-up and off-site storage for copies of such records.

2.5.1. The Company shall maintain the records in a storage facility which shall ensure that all the records are maintained in a good condition without degradation for the specified retention periods.

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### 3. Not Used

### 4. Design and Construction

#### 4.1. Progress Reports

From the Date of this Agreement until Final Completion, the Company shall submit to the Contracting Authority a copy of:

- 4.1.1. a monthly progress report (together with a copy of an abbreviated version thereof) covering all relevant aspects of the New Works including but not limited to:
- (i) all actual or potential changes to the programme to be provided in accordance with Appendix 1/13 to Part 4 of these New Works Requirements (including Contracting Authority Changes and Company Changes and any other changes which are likely to impact upon the Full Services Commencement Date), and the proposed measures to be taken by the Company to overcome such changes;
  - (ii) any grounds for dispute which have occurred or which the Company reasonably believes are likely to occur, and the proposed measures taken by the Company to resolve such grounds for dispute;
  - (iii) all disputes which have occurred or which occur between the Company, the New Works Contractor, the Designer or the Design Checker which are material to the Design or construction and completion of the New Works and the proposed measures taken by the Company to resolve such grounds for disputes, but excluding any information that may be prejudicial to the commercial position of the Company or its associated companies;
  - (iv) the date on which the Company expects to achieve the Permit to Use for each Phase of the New Works and Final Completion; and
  - (v) such other reports as may be required to be produced by the Company so as to comply with the requirements of third parties excluding all internal Company reports.

#### 4.2. As Constructed Records

- 4.2.1. Notwithstanding any other requirements of this Agreement the Company shall supply to the Contracting Authority within 7 days from the date of issue of a Permit to Use for any Phase, the associated as constructed records as follows, but not limited to:
- (i) "As Built" Drawings as specified in the Health and Safety File within paragraph B of SD 11 Annex A of the MCHW;
  - (ii) "As Built, Operational and Maintenance Records for Trunk Road Structures" in accordance with BD62 of the DMRB;
  - (iii) for Design Elements, other than road Structures, one copy of each of the drawings specified in paragraph 4.2.1(i), including the landscape drawings, on A1 size paper unless otherwise agreed with the Contracting Authority clearly marked "As Built Drawing" in red;
  - (iv) the requirements for road Structures drawings and photographs as referred to in BD62 of the DMRB;
  - (v) a construction report identifying the actual types of materials and construction methods that were used throughout the New Works.

The construction report shall include, but shall not be limited to:

- (a) summarising the information obtained by the laboratory or field tests on the road materials employed in the New Works;
  - (b) commenting on the remedial and corrective actions taken;
  - (c) discussing points of interest or the use of “unusual” and “special” materials and methods of construction;
  - (d) a statement setting out the problems and defects encountered during the construction of the New Works and how such problems were overcome and/or such defects rectified; and
  - (e) record material compliance, other than that provided within paragraph 4.2.1(vi), such as certification, quality assurance, external testing and otherwise.
- (vi) A complete record of sampling and testing data for materials incorporated in the New Works in bound hard copy format unless otherwise agreed with the Contracting Authority. Each of the individual records shall include, in addition to the sampling and testing data:
- (a) the date;
  - (b) the supplier;
  - (c) the source of material; and
  - (d) a statement of compliance or otherwise with the Specification.

Such records shall be consistently referenced to either chainage or specific location(s) within the New Works.

- (vii) Traffic Scotland documentation including, but not limited to, the following information:
- (a) as constructed drawings;
  - (b) equipment and system documentation;
  - (c) certification and test documentation;
  - (d) software documentation;
  - (e) maintenance and service manual;
  - (f) operational manual;
  - (g) system documentation;
  - (h) New Works Site records; and
  - (i) TR1100 documentation.

- (viii) as constructed physical survey results, including co-ordinates and drawings of all permanent fencelines, including Accommodation Works fencelines.

4.2.2. In addition to the requirements for hard copies of submitted information, drawings and text stated in this Section, four copies shall also be supplied in digital Adobe PDF format on compact disc (CD Rom). Digital copies of drawings shall be supplied in Adobe PDF format and AutoCAD format using the latest version of AutoCAD current at the date of completion of the Health and Safety File.

Other digital information shall be supplied in Adobe PDF Format and Microsoft software or equivalent format as agreed by the Contracting Authority.



- 4.2.3. One hard copy and one digital copy of the sections of the Health and Safety File relevant to local authority controlled roads shall also be supplied to each local road authority affected.

Four weeks after the issue of the Permit to Use for any Phase of the New Works the Company shall undertake traffic surveys of all intersection(s), junction(s) and roundabout(s) to ensure that the intersection(s), junction(s) and roundabout(s) are operating in accordance with the Design. The results of the survey(s) shall be made available to the Contracting Authority within 2 weeks of the survey(s).



Aberdeen Western Peripheral Route / Balmedie-Tipperty  
AWPR / B-T Managing Agent, Aberdeen Business Centre,  
Willowbank House, Willowbank Road, Aberdeen AB11 6YG

Tel: **01224 332322** | Fax: **01224 322 361**

Email: [\*\*enquiries@awpr.co.uk\*\*](mailto:enquiries@awpr.co.uk) | Web: [\*\*www.awpr.co.uk\*\*](http://www.awpr.co.uk)

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# Aberdeen Western Peripheral Route / Balmedie - Tipperty

Competition for the Design, Build, Finance and Operation of the  
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Volume Five

Schedule 2: New Works Requirements

Part 7: Third Parties

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**SCHEDULE 2: NEW WORKS REQUIREMENTS**  
**PART 7: THIRD PARTIES**

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**1. General**

- 1.1 The Company shall comply with the requirements of a Relevant Authority / third party detailed in this Part 7 of these New Works Requirements.
- 1.2 Where within this Agreement there is a requirement to consult with a Relevant Authority / third party the Company shall identify the Relevant Authority / third party and comply with their requirements whether or not such requirements or the Relevant Authority / third party are identified within this Part 7 of these New Works Requirements.
- 1.3 Where as a consequence of consultation with a Relevant Authority / third party a requirement is specified which contradicts any other requirement of this Agreement, the Company shall discuss such with the Contracting Authority and where appropriate shall introduce a Company Change in accordance with Clause 35.
- 1.4 The Company shall consult with those Relevant Authorities / third parties detailed in this Part 7 of these New Works Requirements as appropriate, and shall where reasonable take account of comments received.
- 1.5 Reference to those Relevant Authorities or third parties within this Part 7 of these New Works Requirements shall mean these Relevant Authorities or third parties or their successor(s).
- 1.6 The Company shall take all necessary measures to avoid causing damage to Apparatus. The Company shall make its own detailed inquiries of the Relevant Authorities and third parties and shall satisfy itself as to the existence of the exact position of any such Apparatus and the depth, size and gradient thereof.
- 1.7 The Company shall provide Consultation Certificates in accordance with the Certification Procedure.
- 1.8 The terms “works” and “Works” in Appendix 1 shall be taken to mean the New Works whenever the context is relevant.
- 1.9 The term “Company” in Appendix 1 shall be taken to mean the Relevant Authority unless the context indicates otherwise.

**2. Relevant Authorities / Third Parties**

- 2.1 Subject to paragraph 1.2 above the special requirements of certain Relevant Authorities / third parties have been reproduced in a form provided by them.
- 2.2 Where necessary, the Company shall establish with the Relevant Authority / third party the definition of terms within each of the special requirements as applicable to the New Works.
- 2.3 Without prejudice certain terms have been related to the definitions given in this Agreement. Where this has been done the terms are detailed at the start of each of the special requirements.

**APPENDIX 1**



## **Appendix 1A - Special Requirements in Relation to Working on Trafficked Highways**

*The terminology used in these special requirements shall have the meanings assigned to them as detailed in this section with the following amendments:*

**“Contractor”** means the Company as defined in the Agreement; and

**“Contract”** means the Agreement

These Special Requirements relate to the North East Trunk Road Network.

Furthermore, these Special Requirements relate to the incumbent (April 2013) 3G Operating Company. Contact details for the succeeding Operating Company will be provided following the award of the Transport Scotland 4G Operations and Maintenance Contract for the North East network.

### **Conditions and general requirements for Applicants wishing to carry out works on the North East Scotland Trunk Road Network.**

All traffic management must be in strict accordance with the Traffic Signs Manual - Chapter 8 and BEAR Scotland Ltd will only deal with the applicant. The following points must be adhered to when making application and whilst occupying a slot on the network:

- (a) Applicants **must** notify ‘Traffic Scotland’ 15 minutes prior to placing the first cone on the network and again when all Traffic Management is lifted by telephoning **0141 287 9283**.
- (b) Signs must be erected of an appropriate size to display the name and telephone number of the organisation undertaking the works.
- (c) All traffic management must be in strict accordance with TSM Chapter 8.
- (d) All vehicles must comply with clause 2.2.1 of the Traffic Signs Manual (TSM) - Chapter 8 volume 1 (1991).
- (e) All site personnel must wear approved high visibility clothing as per Clause 1.4 of TSM Chapter 8.
- (f) All traffic management equipment must be kept in clean and proper order throughout the duration of the works.
- (g) Two hourly checks are required on all traffic management works. These must be undertaken and recorded for all works including overnight works. Checks must be carried out and recorded.
- (h) The attached network access form must be completed in full. The following information must accompany the completed form.
  - (i) Method statement for the works
  - (ii) Traffic management layout drawing
  - (iii) Contact names and addresses for the works including night-time cover.
- (i) BEAR Scotland Ltd and Her Majesty’s Constabularies reserve the right to remove or have removed any traffic management works, if safe to do so, should exceptional circumstances arise, e.g., a road traffic accident.
- (j) The BEAR Scotland Ltd network is subject to restricted working hours on certain sections. These will be detailed if applicable. It is the responsibility of

the applicant to seek clarification of any restrictions that may apply before commencing work.

- (k) Central reserve signs for any dual carriageway or motorway must be established using the Mobile Lane Closure technique as detailed in Volume 8 Section 4 of the DMRB (ref. TD49/97). This process must be strictly adhered to.
- (l) Works of type A will be subject to discussions with the local Police prior to a slot on the network being allocated.
- (m) BEAR Scotland Ltd will have the final decision on allocation of slots on the network. **This decision is non-negotiable.**
- (n) A minimum notice period of four weeks is required for works of one-week duration or less. A six-week minimum notice will be required for works over a one-week period. This does not affect the Statutory Undertakers Emergency powers.
- (o) Requests that involve emergency works/repairs will be treated on their individual merits.
- (p) For works that require a Temporary Traffic Regulation Order i.e. road closure, speed limit and contraflow a minimum notice period of twelve weeks will be required to allow for consultation with relevant parties i.e. Bus Companies, Local Authorities, Police, etc.

Any queries please contact:

The Traffic Officer  
BEAR Scotland Ltd  
6A Dryden Road  
Bilston Glen  
Loanhead  
Midlothian  
EH20 9TY  
Telephone: 0845 413 0200

**NETWORK ACCESS FORM**

|                                                                           |                   |
|---------------------------------------------------------------------------|-------------------|
| ORIGINATOR OF WORKS :                                                     |                   |
| TRAFFIC MANAGEMENT CONTRACTOR :                                           |                   |
| CONTRACTOR FOR THE WORKS :                                                |                   |
| ADDRESS :                                                                 | HEAD OFFICE TEL:  |
|                                                                           | SITE CONTACT TEL: |
| Route No.                                                                 |                   |
| Location                                                                  |                   |
| Date(s) From:                                                             |                   |
| To:                                                                       |                   |
| Time(s)* From:                                                            |                   |
| To:                                                                       |                   |
| Closure Type**                                                            |                   |
| Lanes Closed***                                                           |                   |
| <b>Section 1.01</b> <i>Speed Limit on Road/ Proposed Speed Limit</i>      |                   |
| Brief Description of Works                                                |                   |
| Method Statement                                                          |                   |
| Temporary Traffic Management Proposals<br>(Attach plan where appropriate) |                   |
| Consultation with local authorities, police etc                           |                   |
| Is Traffic Order Required?<br>(If yes approval is conditional)            |                   |
| Expected Delay****                                                        |                   |

**NOTES**

**Access will ONLY be granted on condition that Traffic Scotland is informed by telephone (0141 287 9283) 15 minutes prior to the first cone being placed on the network when all traffic management has been lifted.**

\* Time Restrictions may apply

\*\* A, B, or C

\*\*\* L1, L2, L3, slip lane, hardshoulder, lay-by, verge, footway

\*\*\*\* To be completed by the Traffic Officer

BEAR Scotland Ltd Response

Approved Yes/No

Signed

Date

Before completing this form please read the conditions and general requirements for applicants wishing to carry out works on the trunk road network.

Form to be completed in full and returned to:

The Traffic Officer  
BEAR Scotland Ltd  
6A Dryden Road  
Bilston Glen  
Loanhead  
Midlothian  
EH20 9TY

Telephone: 0845 413 0200

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**CLOSURE TYPE A, B OR C**

**TYPE A:** are those systems, which are allowed to remain in operation in all traffic flows and visibility conditions. They include all systems involving contraflows and other works of long duration.

**TYPE B:** are those systems which are allowed to remain in operation when the traffic demand is less than the available carriageway capacity when the System is in place and there is good visibility. If the work cannot be completed within the allocated time for completion, then, either the Traffic Management System is to be removed and normal traffic conditions reinstated, or additional signing and lamps to the standard of a TYPE A Traffic Management System is to be installed.

**TYPE C:** similar to TYPE B but the majority of traffic signs required are vehicle mounted. They are carried out when traffic flows permit, in good visibility and generally in daylight although night time systems are permissible. They include continuous mobile operations as well as those, which involve movement and periodic stops of short duration.

**NOTIFICATION/APPLICATION FOR INSTALLATION OF PORTABLE TRAFFIC SIGNALS****CONDITIONS**

1. At least SEVEN WORKING DAYS NOTICE SHALL BE GIVEN for all works other than emergency and urgent works. For emergency and urgent works, e.g., when circumstances arise which could result in immediate danger to the public or serious damage to the road), this notice must be sent WITHIN TWO HOURS of work starting.
2. Wherever signal control is to be used at a works site, which contains or is near a JUNCTION two scaled plans showing the proposed temporary site layout must accompany this application. It is a STATUTORY REQUIREMENT for the Roads Authority to issue WRITTEN site approval BEFORE signals are installed, in these instances.
3. The signal equipment and traffic signs must satisfy fully all the requirements set out in the Traffic Signs Regulations and General Directions 2002, and all other relevant regulations, directions and technical memoranda.
4. Procedures, layouts and operations shall be in accordance with the "Safety at Street Works and Road Works – A Code of Practice" and "Traffic Signs Manual – Chapter 8".
5. The mode of operation of the signals shall be "Vehicle Actuation" to the Department of Transport's booklet "An introduction to the Use of Traffic Actuated Portable Traffic Signals" (the pink booklet), unless otherwise agreed by the Roads Authority in writing.

6. If an external supply of electricity is required for the operation of the signals a separate application must be made to Scottish and Southern Energy and to the Area Engineer (lighting section) for such a supply.
  
7. All apparatus whether hired or owned by the user will be subject to a "beck and call" maintenance contract. The user must establish a safe working method of traffic control within 2 hours of the notification of a fault or defect.
  
8. The apparatus must be inspected and tested before delivery to site and the user must satisfy the Roads Authority and Police that the equipment meets all the necessary requirements and that a competent person has made the pre-delivery check.

Further copies of this form may be obtained from:

The Traffic Officer  
BEAR Scotland Ltd  
6A Dryden Road  
Bilston Glen  
Loanhead  
Midlothian  
EH20 9TY

Telephone: 0845 413 0200

**NOTIFICATION / APPLICATION FOR INSTALLATION OF PORTABLE TRAFFIC SIGNALS**

**SIGNALS MUST BE VEHICLE ACTUATED UNLESS OTHERWISE AGREED WITH BEAR SCOTLAND LTD**

|     |                                                                                                        |                                                                                                                                                                                                                          |
|-----|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| To: | <b>BEAR Scotland Ltd.<br/>6A Dryden Road<br/>Bilston Glen<br/>Loanhead<br/>Midlothian<br/>EH20 9TY</b> | (Please note there is a statutory requirement to notify BEAR Scotland Ltd. of all portable signal installations and it is necessary to obtain approval in writing for those sites, which contain or are near a junction) |
|-----|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

1. I (name of applicant).....  
 on behalf of (state firm, address and phone no.).....

Give notice of intention to place and operate portable traffic signals at (state location)

In accordance with the overleaf conditions. The intended dates of operations are:-

2. Start date and time ..... Will signals be operational at all times YES/NO  
 Finish date and time ..... If no please state times of operation.....

3. **BEAR Scotland Ltd must be notified within 48 hours of signals being removed from the carriageway.**

4. List below two named employees and the signal hire company contacts, (at least one of whom shall be available at any time), who are in the first instance, to be called out at any time by the Police or by BEAR Scotland Ltd to rectify signals which are not working or not working properly.

Named Contacts:-

| NAME                       | CONTACT ADDRESS and TELEPHONE No |
|----------------------------|----------------------------------|
| (a) (Employee).....        | Day .....                        |
|                            | Night .....                      |
| (b) (Employee).....        | Day .....                        |
|                            | Night .....                      |
| (c) (Signal Company) ..... | Day .....                        |
|                            | Night .....                      |

I agree to meet all costs which are incurred by BEAR Scotland Ltd in respect of the connection, operation and disconnection of the signals and in respect of giving emergency attention in the event that the "named contacts" cannot be reached or are unable to rectify any fault within 2 hours of the first notification that the signals or associated signing are faulty.

Address where invoices to be sent if different from above:-

Signed ..... Date ..... On behalf of .....

## Traffic Management Requirements

Where work is carried out on or adjacent to a road open to vehicles, all vehicles and mobile plant operating on or adjacent to that road in the execution of the operations shall be painted in a conspicuous colour as described hereafter:

- (i) All vehicles used in mobile lane closures as defined in Section 6 "Type C Works" in Chapter 8 of the Traffic Signs Manual shall be painted in non-reflectorised yellow (Colour No. 355 to BS381 C or similar). Similarly all vehicles engaged in Operations within unprotected trafficked lanes for example, setting up major traffic management layouts such as tapers and contraflows) on dual carriageways and other high speed roads shall be painted non-reflectorised yellow.
- (ii) All other vehicles undertaking Operations shall be generally light in colour preferably but not necessarily non-reflectorised yellow and/or provide, over the full width and height of the vehicle which is exposed to approaching vehicles, conspicuous markings and signs to define clearly that the vehicle is a roadworks vehicle.
- (iii) Vehicles shall have a sign board reading "Highway Maintenance" (to Diagram 740A of Schedule 12 Part V of the Traffic Signs Regulations and General Directions 1994) fixed at the rear. The lettering shall be 150 millimetres "x height" except that for light vans and cars it shall be the largest "x height" that can be accommodated out of the following heights: 37.5, 50, 62.5 or 100 millimetres. The lettering shall be block capital letters from the alphabet described in the Traffic Signs Regulations and General Directions 2002 Schedule 13 Part II on a yellow non-reflectorised background in accordance with BS 381, Colour No. 355. In addition all purpose vehicles and plant shall be provided with either roof mounted light bars or at least two amber flashing beacons and light vans and cars shall be provided with a roof mounted amber flashing distinctive lamp.
- (iv) All warning lamps shall be switched on when the vehicle or plant is manoeuvring into or out of the location of the Operations, operating at low speed on the carriageway or hard shoulder open to vehicles or standing on a carriageway or hard shoulder open to vehicles.

### Weekly Programme of Intent

Weekly Programme of Intent – The Contractor shall by **1200hrs** each following day, provide the Operating Company's Traffic officer with a detailed summary of Traffic Management Installation which have been in use on the Contract on each day, in the format attached.

### Daily Record of Traffic Installations

Daily Record of Traffic Installations – The Contractor shall by **1200hrs** each following day, provide the Operating Company's Traffic Officer with a detailed summary of Traffic Management Installations which have been used in the Contract on each day, in the format attached.



|                                                                        |      |    |                                       |  |  |  |  |      |   |          |   |                                |                    |                                               |       |                    |               |  |  |  |
|------------------------------------------------------------------------|------|----|---------------------------------------|--|--|--|--|------|---|----------|---|--------------------------------|--------------------|-----------------------------------------------|-------|--------------------|---------------|--|--|--|
| WEEKLY PROGRAMME OF INTENT AND NOTIFICATION OF CARRIAGEWAY OCCUPATIONS |      |    |                                       |  |  |  |  |      |   |          |   |                                |                    | Estimated delay to be completed by the        |       |                    |               |  |  |  |
| SOUTH EAST UNIT                                                        |      |    |                                       |  |  |  |  |      |   |          |   |                                |                    | Traffic Officer                               |       |                    |               |  |  |  |
| PROGRAMME PERIOD - WEEK COMMENCING                                     |      |    |                                       |  |  |  |  |      |   |          |   | Monday :                       |                    |                                               |       |                    |               |  |  |  |
| LOCATION                                                               |      |    | ACTIVITY DETAILS                      |  |  |  |  | DAYS |   | DURATION |   | CARRIAGEWAY OCCUPATION DETAILS |                    |                                               |       |                    |               |  |  |  |
| ROUTE<br>JUNCTION NAME/NUMBER<br>DIRECTION                             |      |    |                                       |  |  |  |  |      |   |          |   | CLOSURE<br>TYPE<br>A, B, or C  | ESTIMATED<br>DELAY | TRAFFIC MANAGEMENT<br>CONTRACTOR/CONING<br>BY |       | MAIN<br>CONTRACTOR |               |  |  |  |
| ROUTE                                                                  | FROM | TO | LOCATION/DESCRIPTION/REASON/DIVERSION |  |  |  |  | M    | T | W        | T | F                              | S                  | Su                                            | START | END                | (SPEED LIMIT) |  |  |  |
|                                                                        |      |    |                                       |  |  |  |  |      |   |          |   |                                |                    |                                               |       |                    |               |  |  |  |
|                                                                        |      |    |                                       |  |  |  |  |      |   |          |   |                                |                    |                                               |       |                    |               |  |  |  |
|                                                                        |      |    |                                       |  |  |  |  |      |   |          |   |                                |                    |                                               |       |                    |               |  |  |  |
|                                                                        |      |    |                                       |  |  |  |  |      |   |          |   |                                |                    |                                               |       |                    |               |  |  |  |
|                                                                        |      |    |                                       |  |  |  |  |      |   |          |   |                                |                    |                                               |       |                    |               |  |  |  |
|                                                                        |      |    |                                       |  |  |  |  |      |   |          |   |                                |                    |                                               |       |                    |               |  |  |  |

**E-MAIL TO [REDACTED] :[REDACTED]@nadics.com OR FAX TO 0131 663 8016**

**ALL REQUESTS MUST INCLUDE A SITE MOBILE/ 24HOUR CONTACT NUMBER TEL: \_\_\_\_\_ NAME: \_\_\_\_\_**

|                                                                  |                                     |                                                                                                                                                                                                 |
|------------------------------------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CODING FOR USE IN "ESTIMATED DELAY" COLUMN:</b>               | <b>ABBREVIATIONS</b>                |                                                                                                                                                                                                 |
| <b>The first digit indicates the extent of the delay</b>         | HS: HARD SHOULDER                   | COMMENTS: THE ABOVE INFORMATION IS BASED ON PLANNED WORKS WHICH MAY HAVE TO BE CHANGED AT SHORT NOTICE AS CIRCUMSTANCES DICTATE. IT SHOULD NOT THEREFORE BE TAKEN AS NECESSARILY COMPREHENSIVE. |
| 1 LITTLE OR NO DELAY                                             | NS: NEARSIDE                        |                                                                                                                                                                                                 |
| 2 SLIGHT DELAY                                                   | OS: OFFSIDE                         |                                                                                                                                                                                                 |
| 3 MODERATE DELAY                                                 | CL: CENTRE LANE                     |                                                                                                                                                                                                 |
| 4 SERIOUS DELAY                                                  | RL: ROUNDABOUT                      |                                                                                                                                                                                                 |
|                                                                  | TL: TURNING LANE                    |                                                                                                                                                                                                 |
|                                                                  | SL: SLIP LANE                       |                                                                                                                                                                                                 |
|                                                                  | CF: CONTRAFLOW                      |                                                                                                                                                                                                 |
| <b>The second digit indicates the time the delay is expected</b> | NB: NORTHBOUND                      | IN CASE OF QUERY CONTACT:<br>TELEPHONE:                                                                                                                                                         |
| 1 AT ALL TIMES                                                   | SB: SOUTHBOUND                      |                                                                                                                                                                                                 |
| 2 PEAK HOURS                                                     | EB: EASTBOUND                       |                                                                                                                                                                                                 |
| 3 OFF PEAK HOURS                                                 | WB: WESTBOUND                       |                                                                                                                                                                                                 |
|                                                                  | SCT: SINGLE CARRIAGEWAY TEMP LIGHTS |                                                                                                                                                                                                 |
|                                                                  | MLC: MOBILE LANE CLOSURE            |                                                                                                                                                                                                 |

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**Appendix 1B - Special Requirements in Relation to the Scottish Government Agriculture Food and Rural Communities Directorate**

*The terminology used in these special requirements shall have the meanings assigned to them as detailed in this section with the following amendments:*

*“Contractor” means the Company as defined in the Agreement; and*

*“Contract” means the Agreement; and*

*“Engineer” means the Contracting Authority.*

**1. Special requirements in relation to the Scottish Government Agriculture Food and Rural Communities Directorate are as follows:**

Before commencing any work over any portion of the Site the Contractor shall confirm with Scottish Government Representative, details of any restrictions relating to the prevention of the spread of animal, plant and/or poultry diseases which may for the time being be in force relating to the Site and any surrounding land and/or access ways to which the Contractor or any sub-contractor employed by him may have to seek to gain entry for the purpose of the Works. The Scottish Government Representative, can be contacted at the following point:

|          |                                                                                                                                                                                                                                           |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Address: | The Scottish Government Agriculture Food and Rural Communities Directorate (AFRC)<br>Thainstone Court<br>Inverurie<br>Aberdeenshire<br>AB51 5YA<br>Tel: 01467 626222<br>Fax: 01467 626217<br>Email: SGRPID.thainstone@scotland.gsi.gov.uk |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

2. The Contractor shall ensure that his employees or the employees of any sub-contractor employed by him shall avoid all contact with livestock on or adjacent to the Site and keep strictly to any route which has been agreed with any owner/occupier of land affected by the Works at all times.
3. Where it is necessary for the purpose of the Works to enter land on which livestock are or may be kept the Contractor shall take all precautions to prevent any livestock penetration from adjacent land onto such land and/or contact between any livestock on that land and other livestock from adjacent land.
4. Where it is necessary for the purpose of the Works to enter land which is or has recently been occupied by livestock, the Contractor shall provide at each entry or exit to such land, appropriate arrangements for disinfecting all footwear and vehicles upon entry or exit from such land to the satisfaction of the Engineer. He shall ensure that all footwear and vehicles are cleansed of all dirt and mud before disinfecting with a clean disinfectant, regularly replenished at the correct dilution and which carries a valid citation on the label certifying approval by Scottish Government Agriculture Food and Rural Communities Directorate.
5. The Contractor shall not enter buildings occupied or used by livestock for the purpose of the Works without the express written consent of the owner/occupier. When such

- entry is necessary, rubber boots and protective over garments of an appropriate type shall be worn at all times which shall be disinfected upon the entry and exit from such buildings in accordance with the instructions given at paragraph 4 above.
6. Notwithstanding any other provisions within the Contract the Contractor shall take all necessary precautions to ensure that streams, ditches and water troughs are not polluted as a result of carrying out of the Works and that ditches and drainage outfalls are adequately protected from damage pollution and/or silting to the satisfaction of the Engineer.
  7. The Contractor shall ensure that litter and/or debris resulting from the Works is not left or allowed to accumulate on or adjacent to the Site in areas accessible to livestock. The Contractor shall particularly make every effort to remove discarded foodstuffs remaining from human consumption - these may carry infectious agents harmful to livestock.
  8. The Contractor shall ensure that all gates are kept closed and appropriately secured and shall make every effort to avoid damage to fences, hedges, trees and walls in order to prevent livestock from straying. Where such damage does occur the Contractor shall take immediate action to secure any resulting breach from the penetration and/or escape of livestock and immediately thereafter notify the Engineer who shall consult the owner/occupier as appropriate.
  9. In addition to the above requirements the Contractor shall take all necessary precautions to protect farmers' stock herds against the risk/spread of Brucellosis. Such precautions shall include, but not be limited to, the provision by the Contractor at each entry or exit to such land, appropriate arrangements for disinfecting all footwear and vehicles upon entry or exit from such land to the satisfaction of the Engineer. He shall ensure that all footwear and vehicles are cleansed of all dirt and mud before disinfecting with a clean disinfectant, regularly replenished at the correct dilution and which carries a valid citation on the label certifying approval by Scottish Government Agriculture Food and Rural Communities Directorate.
  10. The Contractor shall strictly comply with any restrictions and/or precautions relating to the movement of soil which may be requested by the Scottish Government Agriculture Food and Rural Communities Directorate in the interest of restricting the spread of crop diseases, such as (but not restricted to):
    - (i) Rhizomania (affecting beet)
    - (ii) Red Core Disease (affecting strawberries)
    - (iii) Wart Disease (affecting potatoes)
    - (iv) Verticillium Wilt (affecting hops)
    - (v) Cyst Nematodes (affecting potatoes/beet)
  11. The Contractor shall strictly comply with any restrictions and/or precautions relating to the movement of soil which may be requested by the Scottish Government Agriculture Food and Rural Communities Directorate in the interests of preventing the spread of the following plant species:
    - (i) Japanese Knotweed
    - (ii) Giant Hogweed

In particular any soil or other such arising contaminated with or suspected of being contaminated with the rhizomes and/or roots of these species SHALL NOT be spread to areas currently free of these plants but shall be disposed of as directed by the Scottish Government Agriculture Food and Rural Communities Directorate Representative.

- 
- 12 The Contractor shall strictly comply with the Plant Health Order 2012 relating to the import and movement of ash seeds, plants and trees in order to prevent further spread of Chalara dieback of ash (*Chalara fraxinea*).
- 13 With regard to livestock diseases these include but are not restricted to :
1. Foot and Mouth Disease
  2. Newcastle Disease (Fowl Pest)
  3. Swine Fever
  4. Swine Vesicular Disease

Should an outbreak of any of the above highly infectious diseases occur in the area the Contractor and/or any sub-contractor employed by him shall not enter further upon any land and shall immediately inform the Engineer and request instructions. The Engineer shall consult with and seek instructions immediately from the Scottish Government Agriculture Food and Rural Communities Directorate Representative.

14 Carcase Burial Pits

- (i) Such pits contain the remains of animals which have been slaughtered for the purposes of containing certain diseases (particularly Foot and Mouth, but occasionally Anthrax). Unauthorised exhumation of such carcasses is illegal. Where there is prior knowledge that Carcase Burial Pits may exist in the area of the Works the Scottish Government Agriculture Food and Rural Communities Directorate Representative may be able to offer assistance in their location. However, if during the course of the Works a Carcase Burial Pit is encountered by the Contractor or any sub-contractor employed by him all work shall cease at that location and the Contractor shall appropriately secure that area of the Site against access and immediately inform the Engineer and request instructions. The Engineer shall consult with and seek instructions immediately from the Scottish Government Agriculture Food and Rural Communities Directorate Representative.

Compliance with the above requirements shall not relieve the Contractor of any of his obligations under the Contract.

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**Appendix 1C - Special Requirements in relation to Scottish Natural Heritage**

*The terminology used in these special requirements shall have the meanings assigned to them as detailed in this section with the following amendments:*

**“Contractor”** means the Company as defined in the Agreement.

**1. Special requirements in relation to Scottish Natural Heritage are as follows:**

- (i) The Contractor shall take cognisance of the environmental importance of any area affected by the investigation and shall comply with all relevant legislation.
  - (a) The Contractor shall consult with Scottish Natural Heritage if any operation affects a statutory protected area, including but not restricted to, The River Dee Special Area of Conservation (SAC), Ythan Estuary, Sands of Forvie & Meikle Loch SAC, Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI) and and Corby, Lily and Bishops Lochs Site of Special Scientific Interest (SSSI).
  - (b) The Contractor shall consult with Scottish Natural Heritage if any operation affects a statutory protected species. Where protected species are affected by the Works, the Contractor shall prepare and submit a Protected Species Licence Application, to include a mitigation strategy in advance to Scottish Natural Heritage which shall be agreed before such operations proceed.
  - (c) The Contractor shall provide the findings of pre-construction ecological surveys to Scottish Natural Heritage as part of on-going consultations.
  - (d) The Contractor shall consult with Scottish Natural Heritage before and during and works affecting The River Dee SAC and Corby, Lily and Bishops Lochs SSSI, and maintain written records of such consultations. Scottish Natural Heritage shall be informed of planned works a minimum of 7 days prior to commencing works within the SAC. Fence lines to secure and mark the boundary of the works adjacent to and within the SAC shall be inspected and agreed with SNH in advance of works commencing.

The Contractor shall meet all other requirements of the appropriate regulating body in respect of water quality, air quality and noise emissions.

Address: Scottish Natural Heritage  
Fodderty Way  
Dingwall Business Park  
Dingwall  
IV15 9XB

Tel: 01349 865333

- (ii) The Contractor shall liaise with the Ecologist appointed by SNH and inform the Contracting Authority a minimum of 7 days prior to commencing Works in any environmentally sensitive areas as identified at the start of the contract.

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**Appendix 1D - Special Requirements in relation to Historic Scotland****1. Undiscovered remains**

Under principles and procedures agreed between Historic Scotland (HS) and the Contracting Authority responsibility for the main programme of archaeological mitigation work (i.e. archaeological excavation and recording) along the route of any trunk road scheme lies with the Contracting Authority through Historic Scotland. Archaeological evaluation and mitigation works are planned to be completed by the start of construction; however undiscovered archaeological remains may still be present. The Company shall be aware that such undiscovered remains may be present and be revealed in the course of works. In such circumstances the Company shall ensure that procedures are in place to draw upon the services of an appropriately qualified Archaeological Contractor to liaise with Historic Scotland and to advise on and oversee necessary protection and mitigation measures.

**2. Control of Ancillary Works**

- (a) Where not already assessed within the Environmental Statements for the Schemes, the Company shall engage an appropriately qualified Archaeological Contractor to advise on the location, outwith the road line, of all Constructional Plant and temporary Works including borrow pits, spoil heaps, surplus soil disposal areas, haul roads, work camps, material storage areas. These may be on areas of land out-with the locations fully studied during the scheme assessment process.
- (b) The Archaeological Contractor shall have access to all Archaeological Reports on the Study Area prepared as part of the Environmental Assessment process. For works out-with the boundaries of the Study Area he shall undertake sufficient Desk Based Research and Fieldwork to identify the location, significance and extent of all sites of archaeological interest in the wider search area.
- (c) The Company shall make full use of the above information and the advice of his Archaeological Contractor to plan the works in accordance with current Government policy for the protection of the archaeological heritage. In general Works shall be planned to avoid significant archaeological features.
- (d) Currently no Scheduled Monument Consent is required. Should Works out-with the areas addressed in the Environmental Statements be required, prior to Works of any type within the boundary of any Scheduled Areas or Scheduled Ancient Monuments. Any application for Scheduled Monument Consent shall include a detailed specification for any proposed fieldwork mitigation. If Scheduled Monument Consent is granted, no Works may take place until Historic Scotland has approved the results of the fieldwork mitigation. Early contact with Historic Scotland is vital if works of any kind are proposed or suggested within, or within 50m of the boundary of, any Scheduled Monuments or Scheduled Areas.
- (e) For areas which the Archaeological Contractor research suggests may be archaeologically sensitive but the full potential remains uncertain, prior archaeological evaluation may be required to identify appropriate mitigation.
- (f) Where it has been determined that archaeological site(s) should be preserved but they lie so close to any proposed Works that they may be at risk from inadvertent damage, the Company, using the advice of his Archaeological Contractor, shall arrange for temporary fencing to be erected around the site(s) prior to works commencing. If any Scheduled Monuments or Areas are involved, Historic Scotland's prior written agreement must be sought on the area to be fenced. No Works of any nature will be permitted within these fenced-off areas.

- (g) For any Works requiring Planning Permission, the Company shall submit to the planning authority, as part of his planning application, a statement of his archaeological assessment of the area, the implications of his development upon it and the details of any archaeological mitigation proposed.

### 3. Design and Mitigation: Methodologies

The Design and mitigation shall be in accordance with current good practice guidelines within Scotland including, but not limited to, the following:

- (a) Association for Environmental Archaeology 1995 Environmental Archaeology and Archaeological Evaluations, Working Paper No. 2;
- (b) Brown, D., 2007 Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation, Archaeological Archives Forum;
- (c) English Heritage, 2010 Waterlogged Wood: Guidelines on the Recording, Sampling, Conservation and Curation of Waterlogged Wood;
- (d) English Heritage, 2011 Environmental Archaeology a guide to the theory and practice of methods, from sampling and recovery to post-excavation, 2nd Edition;
- (e) Faegri, K. et al, 1989 Textbook of Pollen Analysis, 4th edition;
- (f) Garratt-Frost, S., 1992 The Law and Burial Archaeology, IfA Technical Paper No. 11;
- (g) Hall, A., 1995 Environmental archaeology and archaeological evaluations: Recommendations concerning the environmental archaeology component of archaeological evaluations in England, Working Paper 2, Association for Environmental Archaeology;
- (h) Historic Scotland, 1996, Project Design, Implementation and Archiving (Historic Scotland Archaeological Procedure Paper 2);
- (i) Historic Scotland, 1997, The Treatment of Human Remains in Archaeology (Historic Scotland Operational Policy Paper 5) Reprinted and Amended 2006;
- (j) Institute for Archaeologists, 1994, Standard and Guidance for archaeological field evaluation, Revised 2008;
- (k) Institute for Archaeologists, 1994, Standard and Guidance for an archaeological watching brief, Revised 2008;
- (l) Institute for Archaeologists, 1995 Standard and Guidance for archaeological excavation, Revised 2008;
- (m) Institute for Archaeologists, 2001 Standard and Guidance for the collection, documentation, conservation and research of archaeological material, Revised 2008;
- (n) Institute for Archaeologists, 2009 Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives;
- (o) Mays, S., Brickley, M., and Dodwell N., 2004, Human Bones from Archaeological Sites: Guidelines for producing assessment documents and analytical reports;
- (p) McKinley, J.I., and Roberts, C., 1993 Excavation and post-excavation treatment of cremated and inhumed human remains, IfA Technical Paper No. 13;
- (q) Richards, J.C., Richards, J., and Robinson, D., (Eds), 2000, Digital Archives from Excavation and Fieldwork: Guide to Good Practice (Second Edition), Archaeology Data Service;
- (r) Royal Commission on the Ancient and Historical Monuments of Scotland, 1996a, Guidelines for Archiving of Archaeological Projects, ISSN 1352-1098;



- (s) Royal Commission on the Ancient and Historical Monuments of Scotland, 1996b, Guidelines for Archiving of Archaeological Projects;
- (t) Scottish Government 2008 Treasure Trove in Scotland – a code of practice;
- (u) Society of Museum Archaeologists, 1993 Selection, Retention and Dispersal of Archaeological Collections: Guidelines for use in England, Wales and Northern Ireland;
- (v) Society of Museum Archaeologists, 1995 Towards an Accessible Archaeological Archive, The Transfer of Archaeological Archives to Museums: Guidelines for use in England, Northern Ireland, Scotland and Wales;
- (w) Walker, K., 1990 Guidelines for the Preparation of Excavation Archives for Long-term Storage, UKIC.

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**Appendix 1E - Special Requirements in Relation to the Scottish Environment Protection Agency**

*The terminology used in these special requirements shall have the meanings assigned to them as detailed in this section with the following amendments:*

**“Contractor”** means the Company as defined in the Agreement.

Special Requirements in Relation to the Scottish Environment Protection Agency (SEPA) are as follows:-

**1. The Contractor shall comply with the Water Environment (Controlled Activities) (Scotland) Regulations 2011.**

The Control of Pollution Act 1974 (COPA 1974) which controlled discharges of poisonous, noxious or polluting substances and trade and sewage effluents to controlled waters in Scotland, was replaced by the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR), which came into force in March 2011 (superseding CAR 2005 which came into force in 2006).

It is important to undertake early consultation with SEPA to discuss any proposals for engineering activities, point source discharges, abstractions or impoundments in or near the water environment as it is an offence under the 2011 Regulations to carry out the majority of these controlled activities without a CAR authorisation.

Further details are provided in the Practical Guide on CAR via the web link below:

[http://www.sepa.org.uk/water/water\\_regulation.aspx](http://www.sepa.org.uk/water/water_regulation.aspx)

SEPA Contact Name: [REDACTED]

Address:

Inverdee House

Baxter Street  
Torry  
Aberdeen

AB11 9QA

Tel: 01224 266600

Telephone: [REDACTED]

Email [REDACTED]

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**Appendix 1F - Special Requirements in Relation to Scottish Water**

*The terminology used in these Special Requirements shall have the meanings assigned to them as detailed in this section with the following amendments:*

**“Contractor”** means the Company as defined in the Agreement; and

**“Contract”** means the Agreement.

1.1 Special requirements in relation to Scottish Water are as follows:

1.2.1 Scottish Water Authority supplies water and sewerage services.

In these Special Requirements the following terms shall have the meanings assigned to them:

**'Authority'** means the Roads Authority (RA) initiating the roads development.

**'Undertaker'** means **Scottish Water (SW)**.

**'Undertaker's Representative'** means the staff of the Scottish Water or its authorised representatives and/or agents.

1.2.2 The Contractor shall be assumed to be appointed by the Roads Authority (or Transport Authority) for the purposes of designing, constructing and/or managing the roads/transport scheme).

1.2.3 Before commencing any work or moving heavy plant or equipment over any portion of the Site the Contractor shall confirm details of all underground plant within the New Works Site.

1.2.4 At all times the contractor shall consider potential risks to SW apparatus and shall take measures to protect such apparatus, in line with best industry practice.

1.2.5 Before commencing any work involving the movement of heavy plant or equipment over any portion of a site, the Contractor shall confirm details of all underground plant within the site belonging to SW with the appropriate SW representative for the area and service involved. If necessary, trial holes shall be excavated to confirm position of SW apparatus. NB Trial holes shall only be done with the expressed permission of Scottish Water.

1.2.6 Where such details show a conflict between SW pipes or plant and the Contractor's works, the Contractor shall give Scottish Water at least two weeks notice of the date on which it is intended to commence such work or movement of plant and equipment in order that the presence of buried plant can be confirmed and indicated by markers.

1.2.7 The Contractor's method statement and safe system of work shall state clearly what measures are to be used to avoid damaging Scottish Water's apparatus and these shall be submitted to SW for consideration. The Contractor shall ensure that SW's plant is protected from damage, but if any damage should occur then SW shall be notified immediately.

1.2.8 The Contractor shall ensure that all method statements and risk assessments that are done which impact on SW apparatus are site specific, appropriate and comply with Scottish Water's Standards and Procedures. The Contractor shall submit completed method statements and risk assessments to SW for

information and comment and shall comply with SW's Distribution, Operations and Maintenance Strategy (DOMS) procedures.

- 1.2.9 Any damage to Scottish Water's apparatus shall be reported immediately to Scottish Water using the SW Call Centre number 0845 601 8855.
- 1.2.10 All costs due to damage to SW apparatus shall be charged to the third party that caused the damage. Costs charged may include any operational costs that were incurred by SW in order to mitigate loss of service and inconvenience to SW customers and hence these costs may be significant.
- 1.2.11 The following specific requirements must also be adhered to:
- (i) All surface apparatus within the site belonging to Scottish Water including manhole covers, toby covers, valve covers, gratings etc shall be identified on site in advance of the works commencing.
  - (ii) On completion of the works the contractor shall again identify the apparatus and check it is still accessible and functional and shall take immediate remedial action if that is not the case.
  - (iii) The level of covers shall be adjusted to suit the new scheme. Alternatively covers shall be replaced or renewed as appropriate to suit the new roads scheme.
  - (iv) Before any work is carried out in the vicinity of pipelines trial holes shall be carefully excavated by hand as required to confirm the position of the pipe.
  - (v) Assistance in tracing SW apparatus can normally be arranged by SW's local representative, who shall be contacted before any trial holes are excavated.
  - (vi) Allow, in general, at least 300 millimetres clearance horizontally and vertically round Scottish Water's pipes in order to allow future repair and maintenance work to be made to the pipe.
  - (vii) The Contractor shall provide appropriate consolidation on reinstatement in order to reduce the effect of subsidence on SW apparatus.
  - (viii) Mechanical excavation shall not be used at the vicinity of SW apparatus. Machinery working can be used but only if agreed by SW. (see SW document "Working in the Vicinity of a Live Main").
  - (ix) Fencing may be required at specific points to exclude access by mechanical plant except at designated crossing points where suitable protection to the main shall be provided. Bridging works may be required at pipe crossings.
  - (x) SW shall be consulted before a decision is made to use explosives within 400m of a water main.
  - (xi) Once exposed, a water main will be treated with the utmost care to prevent damage from any source. It shall be supported as necessary at all stages of excavation and back filling, to the satisfaction of SW. Only short lengths shall be exposed at any time with only one joint being exposed.
  - (xii) In the event of a marker being disturbed for any reason, it shall not be replaced other than in the exact position and to its former depth, unless the repositioning is carried out at the discretion and under the supervision of SW's representative.

- 
- (xiii) Written permission shall be obtained from Scottish Water before water is obtained from the Public Supply and in particular the use of fire hydrants is permitted but only if a Scottish Water licensed standpipe is used.
- (xiv) Scottish Water shall be consulted before any piling is carried out within 15 metres of a water main. Any piling works adjacent to SW apparatus shall be carried out to the recommendations of BS 5228-2:2009 and to SW local requirements. Scottish Water reserves the right not to accept any piling works (or other works) that may pose an unacceptable risk to SW apparatus.
- (xv) Damage to a water main however slight, and even if only to the coating of a pipe, shall be reported immediately to the Undertaker and work suspended and men withdrawn as appropriate until an opportunity to assess the extent of any repair necessary is given.
- (xvi) If traffic is required to cross over a water main on site then the crossing arrangements shall be designed by the contractor and submitted to SW for consideration and acceptance. Such arrangements shall be designed so as to limit loading and settlement on the pipe and to limit risk of damage to the asset to acceptable levels. To avoid doubt, it should be noted that the final responsibility for the crossing point design lies with the contractor.
- (xvii) Water mains are normally laid at between 750 millimetres and 1500 millimetres cover but larger mains often cannot follow minor variations in the ground contours readily and may be shallower or deeper than this.
- (xviii) Sewer pipe depths can vary from 750mm to over ten metres and present significant risks. The primary risks relate to
- a) Falling from heights due to deep manholes.
  - b) Noxious fumes and gases within the sewer system
- (xix) Under no circumstances must anyone enter a sewer on site and manhole covers should not be removed unless under SW's strict control arrangements.
- (xx) No work shall be done to the sewer or system without the expressed permission of Scottish Water by means of the issue of an Access Transfer Certificate.
- (xxi) Directional drilling or any other type of non-open cut installation of services shall not take place near Scottish Water plant or mains without written permission being given.
- (xxii) Where other apparatus or services are to be laid alongside a water main, a minimum separating distance shall be agreed on site. All trenches crossing the line of a water main shall be kept as near a right angle to the axis of the main as possible (i.e. shortest possible crossing).
- (xxiii) As part of the DOMS procedures and as part of the contractor's method statement, contingency arrangements may be required on site to cover the possibility of a SW asset being rendered inoperable by the contractor. Contingency arrangements should include
- a) Contact names and details
  - b) Contingency options
  - c) Emergency procedures
-

- (xxiv) Where it is necessary to lay new apparatus across and above a water main an appropriate distance shall be left between the bottom of the new apparatus and the top of the main. This shall be agreed with SW
- (xxv) Where apparatus shall pass below a water main the trench shall be excavated by hand. Care will be taken so as to avoid undermining the water main (or sewer) and proposals shall be submitted by the contractor and agreed with SW
- a) 48 hours notice of intention to back-fill under, over or adjacent to a water main shall be given to SW who then may arrange a representative to advise as to the suitability and consolidation of back-fill material over the pipeline.
- b) Backfill material shall be suitable excavated or imported inert material. Material shall be agreed with SW.

1.2.12 The following tree planting requirements must also be adhered to:

- (i) Before tree planting is carried out near mains approval shall be obtained from Scottish Water.
- (ii) The consent to plant trees will indicate what areas may be planted and also the type of trees.
- (iii) The only hardwood plants which cannot be planted directly across the water main are hedge plants such as Quickthorn, Blackthorn, etc. and these shall only be planted where a hedge is necessary either for screening purposes or to indicate a field boundary. Poplar and Willow trees shall not be planted within 10m of a water main.
- (iv) The following trees and those of similar size (be either deciduous or evergreen) shall not be planted within 6m of a water main or sewer e.g. Ash, Beech, most Conifers, Elm, Horse Chestnut, Lime, Maple, Oak, Sycamore. Apple and Pear trees also come under this category.
- (v) Raspberries, Gooseberries and Blackcurrant may be planted close to a water main or sewer but a 4m strip (1.5m each side of the water main) shall be left clear at all times.
- (vi) Dwarf Apple Stocks may be planted to within 3m of a water main or sewer.
- (vii) In cases where screening is required, the following are shallow-rooting and may be planted close to the mains or sewer:
- a. Blackthorn, Broom, Cotoneaster, Elder, Hazel, Laurel, Privet, Quickthorn, Snowberry and most ornamental shrubs.
- (viii) Christmas Trees (Picca Abies) may be planted to within 3m of the main or sewer. However, permission is given on the strict understanding that the Christmas Trees are clear felled at intervals not exceeding seven years.
- (ix) Before any landscaping is carried out near water mains approval shall be obtained from Scottish water.
- (x) Any consent to landscape will indicate the maximum and minimum depth of earth allowed to be added or subtracted to the overburden over the length of the pipe within which this applies. No heavy plant shall be used on or around the pipe without the express permission of SW in case of structural damage.

- 
- (xi) However, no landscaping over the length of the pipe and the indicated width on the consent will be allowed that would affect SW's ability to reach the pipe in the event of an emergency.

1.2.13 The following other requirements must also be adhered to:

- (i) The Contractor shall not allow material to enter the sewerage system or discharge to the sewerage system without the express permission of Scottish Water.
- (ii) In the event of any damage whatsoever to Water or Sewerage apparatus the Contractor shall immediately inform CUSTOMER SERVICES AT SCOTTISH WATER 55 BUCKSTONE TERRACE EDINBURGH EH10 6XH. TELEPHONE: 0845 601 8855. FAX: 0131 445 5040. (Ask for Service Request Desk).
- (iii) The contractor should liaise with one or more of the following:-
- a) Service Relocation team at 0141 355 5590 (For all NRSWA major Works projects in the first instance.
  - b) Scottish Water's local staff
  - c) SW Asset Delivery staff
  - d) Other SW employees as appropriate.

**Appendix 1G - Special Requirements in Relation to Aberdeenshire Council – Planning Department**

*The terminology used in these special requirements shall have the meanings assigned to them as detailed in this section with the following amendments:*

**“Contractor”** means the Company as defined in the Agreement.

1.1 Special requirements in relation to Aberdeenshire Council Planning Department are as follows:

1.1.1 The Contractor is required to comply with the special requirements of the following Planning and Environmental Departments, which should be contacted 7 days prior to commencement of the contract with full details of the proposed Works. Formartine Area

|                       |                                                                         |
|-----------------------|-------------------------------------------------------------------------|
| Contact               | [REDACTED] , Area Planning Officer                                      |
| Administrative Base   | 45 Bridge Street, Ellon, AB41 9AA                                       |
| Telephone             | [REDACTED]                                                              |
| Fax                   | [REDACTED]                                                              |
| Area Office Surgeries | Towie House, Turriff - Wednesday (every 3 weeks)<br>13.45 pm - 16.15 pm |
| Email                 | [REDACTED]                                                              |

## Garioch Area

|                     |                                                   |
|---------------------|---------------------------------------------------|
| Contact             | [REDACTED], Area Planning Officer                 |
| Administrative Base | Gordon House, Blackhall Road, Inverurie, AB51 3WA |
| Telephone           | [REDACTED]                                        |
| Fax                 | [REDACTED]                                        |
| Email               | [REDACTED]                                        |

## Kincardine &amp; Mearns Area

|                     |                                                |
|---------------------|------------------------------------------------|
| Contact             | [REDACTED], Area Planning Officer              |
| Administrative Base | Viewmount, Arduthie Road, Stonehaven, AB39 2DQ |
| Telephone           | [REDACTED]                                     |
| Fax                 | [REDACTED]                                     |
| Email               | [REDACTED]                                     |



**Appendix 1H - Special Requirements in Relation to Aberdeen City Council – Planning Department**

*The terminology used in these special requirements shall have the meanings assigned to them as detailed in this section with the following amendments:*

**“Contractor”** means the Company as defined in the Agreement.

1.1 Special requirements in relation to Aberdeen City Council Planning Department are as follows:

1.1.1 The Contractor is required to comply with the special requirements of the Roads Department which should be contacted 7 days prior to commencement of the contract with full details of the proposed Works:

**Development Management**

Enterprise, Planning and Infrastructure  
Aberdeen City Council  
Business Hub 4  
Marischal College  
Broad Street  
Aberdeen  
AB10 1AB  
Phone: 01224 523470  
Fax: 01224 523180  
Email: pi@aberdeencity.gov.uk

**Appendix 1I – NOT USED**

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**Appendix 1J - Special Requirements in Relation to British Telecommunications Plc**

*The terminology used in these special requirements shall have the meanings assigned to them as detailed in this section with the following amendments:*

**“Contractor”** means the Company as defined in the Agreement; and

**“Contract”** means the Agreement.

Special requirements in relation to British Telecommunications Plc are as follows:

**In this Special Requirement the following terms shall have these meanings assigned to them:**

- a. **‘Company’** means British Telecommunications Plc (**“BT”**).
  - b. **‘Company Representative’** means the staff of BT, or its authorised representatives or Agents.
  - c. **‘Apparatus’** means all boxes, cabinets, poles and plant including any associated cabling and/or ducting owned by BT.
    - (i) All works in the public highway are subject to the New Roads and Street Works Act 1991, and the Promoter of the work is legally responsible to bear the cost of safeguarding Apparatus. The “highway” includes carriageway, verges, footpaths, etc.
    - (ii) Before commencing any work, or moving of heavy plant or equipment over any portion of the site the contractor shall confirm details of the Apparatus, owned, leased or rented by the Company, within the site with the Company Representative, who can be contacted as detailed in para.(xi).
- Apparatus maps are also available at [www.bt.com/btplant](http://www.bt.com/btplant). Please contact 0800 169 3849 for a user ID and password to access the system.
- (iii) Where such details show that the works or the movement of plant or equipment may endanger the Apparatus, the Contractor must give the Company Representative at least 7 days notice of the date on which it is intended to commence such works or the movement of plant or equipment in order that the presence of any sub-surface Apparatus can be indicated by markers to be supplied by the Company and placed by the Contractor under supervision of the Company Representative. The Contractor shall ensure that all Apparatus, particularly surface running cable, is adequately protected from damage and the Company Representative shall approve such protective measures. In the event of a Company marker being disturbed for any reason it shall not be replaced other than in the exact position and to its former depth unless the repositioning is carried out at the direction and under the supervision of the Company Representative.
  - (iv) In the event of a Company marker being disturbed for any reason it shall not be replaced other than in the exact position and to its former depth unless the

repositioning is carried out at the direction and under the supervision of the Company Representative.

- (v) The Contractor shall take particular care in relation to the protection of Apparatus, where such Apparatus includes the presence within the site of optical fibre and/or co-axial cabling. The Contractor shall make every effort to avoid the disturbance of the Company's network which, if damaged, can prove costly to reinstate. The Contractor shall make every effort to avoid the disturbance of Apparatus more than is absolutely necessary for the completion of the works in accordance with the Contract.
- (vi) When excavating, or backfilling around Apparatus, the Company Representative shall be given adequate notice, which should be not less than 7 days, of the Contractor's intentions in order that he may supervise the works. The Contractor should note that the normal depth of cover for Apparatus and ducts is as follows :-

(e) in footways 350 millimetres, which is to be maintained

(f) in carriageways 600 millimetres, which is to be maintained.

Where the 350/600 millimetres depth of cover cannot be maintained the Contractor shall carry out the instructions of the Company Representative for the protection of the Apparatus. Where the required depth of cover cannot be maintained over cabling, such cables may have to be diverted.

- (vii) All excavation adjacent to Apparatus is to be carried out by hand until the exact extent and/or location of Apparatus is known. Mechanical borers and/or excavators shall not be used within 1.0 metres of Apparatus or 2.0 metres of any pole without the supervisory presence of a Company Representative. To prevent any movement of Apparatus during excavation, complete shuttering shall be used as directed by the Company Representative if:
- (a) excavation is deeper than the depth of cover of adjacent Apparatus;
  - (b) excavation is within 1.0 metres of Apparatus in stable soil; or
  - (c) excavation is within 5.0 metres of Apparatus in unstable soil.

If for completion of the works the Contractor intends using any of the following:

1. pile driving equipment within 10.0 metres of Apparatus;
2. explosives within 20.0 metres of Apparatus; or
3. laser equipment within 10.0 metres of Apparatus

the Contractor shall advise the Company Representative, in writing, in order that any special protective measures for the Apparatus affected may be arranged.

- (viii) All Company manhole, joint box and/or other access points and chambers within the site shall be kept clear and unobstructed. Access for vehicles, winches, cable drums and/or any further equipment required by the Company for the maintenance of its Apparatus must be maintained at all reasonable times. The Contractor should particularly note the footway type chambers are not specified for carriageway loading and will need to be adequately protected and/or

demolished and rebuilt under supervision of a Company Representative where such chambers are likely to be placed at risk, either temporarily or permanently, from the movement of plant and/or equipment on the site. The Company Representative shall be given reasonable access to all Apparatus and chambers when required. Where BT installs Apparatus during the works this new Apparatus shall be treated as existing Apparatus for the purpose of these Special Requirements.

- (ix) For Frame and Covers that necessitate a change in level please contact the local office. If you wish to provide recessed frames and covers they will have to be supplied by the Company's agreed supplier. The Contractor must be prepared to supply and install such frames and covers in future, and must supply names of who will be liable for future maintenance.
  
- (x) In the event of any damage whatsoever to Apparatus the Contractor must immediately inform BT and report the occurrence as follows :

Call BT fault reporting on **0800 800 154**

**WARNING**

**Entry into all BT underground structures is prohibited to all unauthorised personnel.**

- (xi) For free on site assistance prior to commencement of works :

**Tel : 0800 0232023**

Fax : 020 8326 4050

E-mail : [dbyd@bt.com](mailto:dbyd@bt.com)

Seven working days notice is required.

(Office hours: Monday to Friday 08:00 to 17:00)

Compliance with the above requirements does not relieve the Contractor of any of his obligations under the Contract.

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**Appendix 1K - Special Requirements in Relation to Scotland Gas Networks Ltd – Distribution and Transmission**

*The terminology used in these special requirements shall have the meanings assigned to them as detailed in this section with the following amendments:*

**“Contractor”** means the Company as defined in the Agreement;

**“Contract”** means the Agreement; and

**“Engineer”** means the Contracting Authority.

1.1 Special requirements in relation to Scotland Gas Networks Ltd are as follows:

1.1.1 In these Special Requirements the following terms shall have the meanings assigned to them:

**‘Company’** means Scotland Gas Networks Ltd.

**‘Company Representative’** means the staff of Scotland Gas Networks Ltd or its Authorised Representatives and Agents.

**‘Apparatus’** means all surface or sub-surface equipment and plant including any gas pipeline(s), main and/or service owned, leased or rented by Scotland Gas Networks Ltd.

1.1.2 Before commencing any work or moving heavy plant or equipment over any portion of the Site the Contractor shall confirm details of any Distribution and/or Transmission Apparatus within the Site with the Company Representative, who can be contacted at the following point:

Address: [REDACTED]  
Scotland Gas Networks Ltd  
95 Kilbirnie Street Glasgow  
G5 8JD

E-mail: [REDACTED]

Telephone: [REDACTED]

or for on-site location of plant:

Moleseye (was Susiephone) 0800 800 333

1.1.3 Where such details show that the work or the movement of plant or equipment on the Site may endanger any Apparatus, the Contractor shall give the Company Representative at least 7 days written notice of the date on which it is intended to commence such Works or the movement of plant and equipment in order that the presence of any sub-surface Apparatus can be indicated by markers to be supplied by the Company and placed by the Contractor under the supervision of the Company Representative. The Contractor shall ensure that all Apparatus is adequately protected from damage and such protective measures shall be to the satisfaction of the Company Representative.

1.1.4 In the event of a Company marker being disturbed for any reason it shall not be replaced other than in the exact position and to its former depth unless the repositioning is carried out at the direction and under the supervision of the Company Representative.

- 1.1.5 The Contractor shall carry out all works in connection with the Contract with reference to the requirements of the following publications:
- (i) Institute of Gas Engineers: IGE / SR / 18 Part 1 (1990), Communication 1947 - 'Safe Working in the vicinity of Gas Pipelines, Mains and Associated Installation' (Part 1: 'Operating at Pressures in Excess of 2 Bar').

**Health and Safety Executive (HSE): HS (G) 47 - 'Avoiding danger from underground services'.**

**Scotland Gas Networks Ltd Specification: T/SP/SSW2 - 'Code of Practice for Safe Working in The Vicinity of Scotland Gas Networks Ltd Transmission Pipelines and Associated Installations Operating at Pressures in Excess of 7 Bar'.**

In addition to the above document, the following Special Requirements shall apply to the road construction works within the vicinity of the Transmission network;

1. Planned diversions to SGN apparatus are based on the Specimen Design for the new road.
2. No variations from the specimen design of the new road at interface points with existing or proposed SGN apparatus shall be permitted without the prior written agreement of SGN Ltd.
2. The order of works for the SGN diversions shall be only as prescribed by SGN and shall not be subject to any outside interference.
3. 24 hour access to SGN apparatus and installations shall be maintained by the roads contractor at all times throughout the road construction works.
4. Any works associated with the new road, not covered by the Specimen Design, which impact upon SGN apparatus shall be subject to the conditions of this document, the relevant roads legislation, and the conditions outlined above.

**Scotland Gas Networks Ltd Cathodic Protection Policy T/PL/ECP1.**

- 1.1.6 The Contractor shall avoid the disturbance of Apparatus more than is absolutely necessary for the completion of the Works in accordance with the Contract. In particular 'Thrust Blocks' and other such support shall NOT be disturbed without the specific written approval of the Company Representative. The Contractor should particularly note that large diameter Gas pipelines may either be:
- (a) High Pressure pipelines frequently operating at pressures exceeding 7 bar; or
  - (b) Low, Medium and Intermediate pressure local distribution mains below 7 bar.

For differing reasons either type poses a considerable hazard to safety if damaged. The Contractor shall also note that smaller Gas distribution pipes may be of yellow plastic, cast iron, steel or other such material and that unless specifically known to the contrary any such services encountered during the course of the Works should be assumed to be Gas pipelines and treated as such in

- accordance with these Special Requirements until positively identified otherwise and the Engineer so notified in writing.
- 1.1.7 No vehicle plant or machinery shall cross, stand, operate or travel within 3.0m of any Apparatus particularly gas pipelines except as approved by the Company Representative. The Contractor shall agree his methods of working near any Apparatus with the Company Representative and ensure that any Apparatus is adequately protected from damage by the use of wooden sleeper tracks or reinforced concrete rafts at crossing points as appropriate. Temporary fencing of adequate strength shall be erected to regulate the movement of vehicles plant and machinery in the vicinity of Apparatus. All such protective measures shall be to the satisfaction of the Company Representative.
- 1.1.8 Where for the purposes of completing the Works in accordance with the Contract it is necessary to lay a new service across an existing Gas pipeline whether above or below, a minimum clearance of 600 millimetres shall be left between the outside of the Gas pipeline and the new service to be installed. Under no circumstances shall a new service be laid parallel above or below a gas pipeline. Hydraulic or other form of pressure testing of any new services shall not be permitted within 6.0 metres of any Gas pipeline unless precautions have been taken involving the use of pre-installation tested pipeline having a design factor of 0.3 for a distance of 6.0 metres either side of the Gas pipeline and/or such additional precautions including but not limited to sleeving barriers and the like as the Company Representative may require in consultation with the Engineer.
- 1.1.9 The Contractor shall particularly note that Gas pipelines and other Apparatus of the Company are usually cathodically protected to Scotland Gas Networks Ltd Policy T/PL/ECP1. The Company will require interaction tests to be carried out to determine whether its own system will be adversely affected by any new service and/or its protective measures. Any work requiring the removal modification and/or movement of Apparatus shall only be carried out by the staff of the Company and/or its authorised contractors and Agents. In the event that any cathodic protection posts and/or associated Apparatus require to be removed replaced and/or moved for the purposes of the Works the Contractor shall give not less than seven days' written notice of the requirement to the Company.
- 1.1.10 When excavating or backfilling around Apparatus, the Company Representative shall be given not less than 3 days written notice, of the Contractor's intentions in order that he may supervise the Works.
- 1.1.11 Backfilling shall be in 150 millimetres layers, or as may otherwise be directed, consolidated layer by layer to the satisfaction of the Company Representative. Fill shall be free from flints, stones and carbonaceous material. Where slabbing reduces such depth, clean sand filling shall be used.
- 1.1.12 All excavation adjacent to Apparatus is to be carried out by hand until the exact extent and/or location of Apparatus is known. The Contractor shall note the following:
- (i) Mechanical borers shall not be used within 15 metres of Apparatus; and
  - (ii) Hand held power assisted tools shall not be used within 1.5 metres of Apparatus without the supervisory presence of a Company Representative.
- 1.1.13 To prevent any movement of Apparatus during excavation, complete shuttering shall be used as directed by the Engineer if:



- (i) Excavation is deeper than the depth of cover of adjacent Apparatus;
- (ii) Excavation is within 3.0 metres of Apparatus in stable soil; and
- (iii) Excavation is within 6.0 metres of Apparatus in unstable soil.

Where excavation results in the exposing of Gas pipelines or other Apparatus, protective timber cladding shall be applied to the Gas Pipelines or Apparatus to the satisfaction of the Company Representative and shall be maintained until such excavation is reinstated and backfilled.

1.1.14 If for the completion of the Works the Contractor intends using any of the following:

- (i) Pile driving equipment within 15.0 metres of Apparatus (or such greater distance as may be required to ensure that the MAXIMUM peak particle velocity as measured at the Apparatus does NOT exceed 25 millimetres per second);
- (ii) Explosives within:
  - (a) 400.0 metres of exposed Apparatus; or
  - (b) 100.0 metres of buried Apparatus.
- (iii) Hot Works welding and the like within 15.0 metres of Apparatus; and
- (iv) Hydraulic testing within 6.0 metres of Apparatus.

The Contractor shall advise the Company Representative, giving at least 7 days written notice, in order that any special protective measures for the Apparatus affected may be arranged. The Contractor SHALL NOT proceed with the use of any of the above without the written consent of the Company Representative.

- (iii) All Apparatus manholes and/or other access points and chambers within the Site shall be kept clear and unobstructed. Access for vehicles, winches and/or any further equipment required by the Company for the maintenance of its Apparatus, shall be maintained at all reasonable times and unless otherwise agreed in writing by the Company representative a clearance of 6.0 metres shall be allowed for such access.
- (iv) The covers to Apparatus manholes and/or other access points and chambers shall only be lifted under the direct supervision of the Company Representative. No employee of the Contractor or of any sub-contractor employed by the Contractor shall enter any chamber and/or Apparatus of the Company unless under the supervision of the Company Representative and in any case not before a gas check as specified by the Company Representative has been carried out in the presence of the Company Representative and such checks have shown it to be safe to enter the chamber and/or Apparatus. The Company Representative shall be given reasonable access to all Apparatus and chambers when required.
- (v) In the event of any damage whatsoever even of a minor nature to Apparatus particularly to Gas pipeline coatings and/or test leads the Contractor shall immediately inform the Engineer and report the occurrence by contacting the Company Representative. The Company Representative will arrange for repairs to be carried out.

## 2. Emergency Action

- 2.1.1 The following actions shall be taken by the Contractor in the event of a gas leak in any Apparatus:
- (i) Evacuate all personnel from the vicinity of the pipeline damage or leak.
  - (ii) Remove and/or extinguish all sources of ignition for a distance of at least 200 metres in all directions from the location of the leak. This precaution shall include a ban on the use of any electrical equipment falling within this limit.
  - (iii) IMMEDIATELY inform the Company, the Engineer and (if required) the Emergency services in that order.

**THE EMERGENCY TELEPHONE NUMBER OF THE COMPANY IS:**

**0800 111 999**

- (iv) Secure the area from the approach of all employee traffic and/or the general public.
- (v) Render every assistance to the Emergency Services and/or the Company as shall be requested for the purposes of mitigating damage arising from the leak and/or for the purposes of securing public safety.
- (vi) DO NOT ATTEMPT TO SEAL ANY LEAK OF GAS AT THE POINT OF DAMAGE
- (vii) Compliance with the above requirements shall not relieve the Contractor of any of his obligations under the Contract.

**Appendix 1L - Special Requirements in Relation to Scottish and Southern Energy – Distribution and Transmission**

All works subject to SSE terms and conditions and charging methodology, landowner / legal consents from third parties and the following;

HSE Documents:

- HSG47 Avoiding danger from underground services
- GS6 - Avoiding danger from overhead power lines

## Appendix 1M - Special Requirements in Relation to Network Rail

*The terminology used in these special requirements shall have the meanings assigned to them as detailed in this section with the following amendments:*

**“Contractor”** means the Company as defined in the Agreement; and

**“Contract”** means the Agreement.

### Introduction

The railway is a particularly hazardous environment. The danger from train movements, overhead power lines, buried cables and electrified rails at ground level must not be underestimated. The Industry’s safety policy and safety management systems require the enhancement of some society legislation and the following Special Requirements in relation to Network Rail indicate areas where the legislative requirements are strengthened.

These requirements apply to all types of work on Network Rail land i.e. surveying, inspection, construction and maintenance.

### 1. Definitions

In these Special Requirements, the following terms shall have the meanings assigned to them:

- a. **‘Contractor’** means any person or company to whom a contract for the whole (or any part) of the Works is let and for whom the Other Party is the Contracting Authority.
- b. **‘Isolation’** means planned arrangements for the predetermined period for the interruption of traction electricity between defined locations.
- c. **‘Network Rail Company Standards’** means a standards document issued by Network Rail for its own use (as amended by Network Rail from time to time) in relation to the railway as a whole which applies to the performance of the Works.
- d. **‘Network Rail’s Representative’** means a person duly authorised to act on Network Rail’s behalf.
- e. **‘Other Party’** means a party which has contractual obligations to Network Rail under a works agreement in respect of the design, construction and maintenance of a bridge over or under the railway Infrastructure.
- f. **‘Possession’** means planned safety arrangements which control or prevent the normal movement of rail traffic on the Railway Infrastructure between defined locations and for a pre-determined period.
- g. **‘Railway’** means the Railway Infrastructure, Network Rail’s activities in carrying out the operation, maintenance and replacement of the Railway Infrastructure, and traffic on the Railway Infrastructure.
- h. **‘Railway Infrastructure’** means Network Rail’s Infrastructure and operational track.
- i. **‘Safety Personnel’** means the personnel required to implement safe working practices on or about the Railway Infrastructure.

- j. **'Service'** means electricity cables, gas pipes, water pipes (including piped sewage), other pipelines or signalling telecommunication plant cables and equipment irrespective of owner.
- k. **'Temporary Speed Restriction'** means a planned restriction on the speed of rail traffic between defined locations for a specific period of time.
- l. **'The Works'** means the design and construction, and where the Other Party is obliged to carry it out, the maintenance of a bridge over or under the Railway Infrastructure and all tasks incidental thereto.
- m. **'Work Site'** means any lands or other places, on, or under, in or through which the works are to be executed.

## 2. Access

### 2.1 Written Authority

Before any activity is undertaken in connection with the Works requiring access to land in the ownership of Network Rail, written authority shall be obtained from Network Rail's Representative for access to such land including the conditions under which such access will be granted.

### 2.2 Procedures for Safe Access to Railway Property

Robust procedures must be established and maintained to ensure safe access for all persons to land in the ownership of Network Rail in connection with the Works and such procedures must be submitted to Networks Rail's Representative for written approval prior to access being granted.

### 2.3 Trespass

No person shall be permitted to access land in the ownership of Network Rail beyond the agreed limits of the Works Site or access route for the duration of the Works.

### 2.4 Crossing the Railway Tracks

No person shall cross or convey constructional plant and/or materials across or along any railway track unless special arrangements are made and written consent obtained from Network Rail.

Where public rights of way exist over occupation and/or accommodation level crossings and/or bridges, these crossings shall only be used in the way that they are intended to be used by the public unless special arrangements are made and written

Only in very exceptional circumstances will the provision of a temporary level crossing be permitted. Where Network Rail is prepared to accept the provision of a temporary level crossing for constructional traffic and/or public use sufficient time must be allowed for obtaining the appropriate approvals and the period of notice required by Network Rail for making the necessary arrangements for carrying out the work.

## 3. Risk Management

### 3.1 Robust Procedures for Safe Access and for Safe Working Practices

Systems, procedures and working practices that avoid risk to the Railway arising from the Works and that protect those persons involved in the execution of the Works from risks arising from the Railway must be developed and implemented in conjunction with the Contractor's Health and Safety Plan, as defined in the Construction (Design and Management) Regulations 2007 (as amended from time to time). These shall be submitted to Network Rail's Representative for written approval prior to the Works being undertaken.

Specific training (i.e. Personal Track Safety Training) and competency requirements apply to persons who work on the Railway Infrastructure or require access on or near the line. The training and competence requirements of the Works must be agreed in writing with Network Rail's Representative before access is allowed.

### **3.2 Services**

A full survey must be undertaken to ascertain the location and nature of all services within the Works Site or access route(s). All necessary protective measure must be incorporated and implemented to the satisfaction of the Network Rail's Representative.

The degree of existing protection provided to Services on or about the Railway Infrastructure can vary. Therefore Services must not be interfered with or moved unless authorised by Network Rail's Representative.

Additional precautions must be taken by the Contractor to establish the existence, position and location of any buried Services which may be present before any excavation, or the driving of objects into the ground, is undertaken. All necessary precautions shall be taken by the Contractor to avoid damaging buried Services when excavating, surcharging and driving object into the ground.

Should any unknown or unexpected Service be discovered or uncovered during the Works, the works in the vicinity of the Service must stop, ownership must be established, Network Rail and the owner of the Service must be informed and appropriate precautions for protection must be taken prior to recommencing the works.

Any service not diverted must be supported, maintained, protected as necessary and kept in working order in its existing location.

Where temporary or permanent service diversions are necessary a method and routing specification must be agreed with Network Rail's Representative. The service provided shall be maintained at all times unless otherwise agreed with Network Rail's Representative.

Any equipment (Cable Avoiding Tools (CATS) for example) utilised to establish the position of buried Services must be of a type approved by Network Rail for use on the Railway Infrastructure.

### **3.3 Use of explosives**

Explosives must not be used on or about the Railway Infrastructure without the prior written agreement of Network Rail. Evidence of full compliance with all current legislation relating to the acquisition, storage, keeping and use of explosives must be provided.

### **3.4 Protection to Railway Equipment**

Special protection to prevent damage to the tracks, signal and telecommunication equipment and all other railway equipment and contamination of track ballast during the execution of the Works shall be

designed, constructed, maintained and removed on completion of the Works or as otherwise directed by Network Rail's Representative.

### **3.5 Confined Spaces**

A considerable number of confined spaces exist on or about the Railway Infrastructure. In carrying out the Works all Contracting Authority's and contractor's personnel must fully comply with the requirements of the Confined Spaces Regulations 1997 and the associated Approved Code of Practice.

## **4. Programming of the Works**

### **4.1 Possessions, Isolations and Temporary Speed Restrictions**

The use of Possessions, Isolations and Temporary Speed Restrictions should be avoided to minimise disruption to railway traffic. If the need for Possessions, Isolations and Temporary Speed Restrictions cannot be avoided then they shall only be carried out on dates and at times agreed in writing by Network Rail's Representative.

The notice periods for booking of Possessions, Isolations and Temporary Speed Restrictions are dependent upon the duration and location of the Works. At the earliest opportunity advice should be sought from Network Rail's Representative as to the requirements for booking Possessions, Isolations and Temporary Speed Restrictions.

### **4.2 Initial Programme**

An initial programme for the Works must identify the key construction activities timing constraints and indicate when Possessions, Isolations and Temporary Speed Restrictions are being sought.

### **4.3 Programme Development**

The programme shall be developed taking account of comments from Network Rail's Representative and must be reviewed from time to time as required.

Network Rail may cancel or alter the dates and times of any agreed Possessions, Isolations and Temporary Speed Restrictions at short notice, if this proves necessary because of the overriding operational requirements of the Railway. If this occurs alternative arrangements will be made as soon as the situation permits.

## **5. Method Statements**

Method Statements must include a comprehensive step-by-step account of how the relevant part of the Works will be executed (incorporating where necessary maintenance and subsequent removal) including:

- Working times
- Access routes and location plan
- Plant usage and backup (including equipment and operator certificates)
- Superintendence, inspection and monitoring arrangements
- Temporary works

and as appropriate supported by:

- Design statements
- Drawings and cross sections
- Site and Ground Investigation reports including geotechnical interpretive reports
- Calculations
- Settlement, noise, vibration predictions
- Design check certificates
- Risk mitigation measures
- Storage, movement and clearance of materials and equipment
- Temporary or permanent diversion of services
- Earthing and bonding arrangements near electrified equipment
- Use of Surveying equipment

Method statements for works to be carried out in Possessions, Isolations and Temporary Speed Restrictions must also include a detailed programme for each work item, which must identify critical path activities and include contingency planning i.e. standby plant and equipment etc.

Method statements must be submitted for full consideration, comment and/or approval by Network Rail's Representative in sufficient time to allow for comments to be incorporated and revised proposals to be resubmitted as necessary.

## 6. **Site Management**

### 6.1 **Site Representation**

At the request of Network Rail, the Contractor or the Other Party must appoint a full time senior representative at the Work Site during the course of the Works.

### 6.2 **Training**

Prior to the commencement of and during the Works, familiarisation training and briefings shall be given to everyone who has access to the Works Site. Records of training and briefings are to be retained on the Works Site for inspection. Certain activities carried out during the Works may require railway specific training. These activities shall be identified and notified to the Contractor by Network Rail's Representative when the initial programme of works is submitted.

### 6.3 **Contact Names and telephone numbers**

Prior to commencement of works on the Works Site Network Rail's Representative must be provided with a list of names and telephone numbers for personnel responsible for organising remedial action in the event of an emergency on the Work Site when the Works Site is unattended.

### 6.4 **Accommodation for Network Rail's Representative**

Serviced accommodation for the use of Network Rail's Representative shall be provided in line with the requirements of and to the satisfaction of Network Rail.

### 6.5 **Advertisements**



Advertisements must not be displayed on or about land in the ownership of Network Rail without the prior written consent of Network Rail.

#### **6.6 Working Time**

The Railway (Safety Critical Work) Regulations 1994, and the supporting guidance documents, place strict limitations upon the hours that can be worked by persons who undertake Safety Critical Work as defined by the regulations. During the Works contractors who have employees carrying out Safety Critical Work must be able to demonstrate compliance with the regulations.

#### **6.7 Knowledge and Understanding of English**

Supervisory staff on the Works must have sufficient knowledge of English (both spoken and written) to understand and relay safety information, instructions and training to all personnel.

#### **6.8 Alcohol and Drugs**

All personnel engaged in the Works must comply with Network Rail's current Policy on Alcohol and Drugs. A copy of this will be provided by Network Rail's Representative.

#### **6.9 Clothing and Personnel Protective Equipment**

All persons engaged in the Works must wear high visibility clothing of an approved colour, type and design (including retroreflective strips) acceptable to Network Rail. The personnel protective clothing must be worn correctly and kept in a clean condition.

#### **6.10 Removal of Contractor's Employees**

Network Rail may object to and require the immediate removal from the Works Site of any person thereon who in the opinion of Network Rail's Representative is not in a fit condition to carry out their duties, or is liable to endanger their own health and safety or that of others. Such persons will not be permitted further access to the Works Site without the written agreement of Network Rail's Representative.

#### **6.11 Registers and Certificates**

All registers, site diaries and certificates relevant to the Works must be available for inspection by Network Rail at the Works Site or other locations agreed with Network Rail's Representative.

#### **6.12 Screens, Hoardings and Lights**

Temporary screens, hoardings, guard rails, barriers, fans, protective sheeting, fencing, etc, necessary to ensure the safety and protection of the Railway, the Works and all persons in the vicinity of the Works shall be designed, constructed, maintained and modified as appropriate and removed when no longer required in accordance with agreed method statements and shall not effect signal sighting, places of safety or affect or impair the vision of train drivers.

#### **6.13 Notifications of Accidents to Network Rail**

All accidents and occurrences causing damage to property or potentially affecting the safe working of the Railway; together with all Reportable Injuries and Dangerous Occurrences as defined in the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (as amended from time to time) must be reported to Network Rail.

Details of all such events shall be recorded in a format agreed with Network Rail's Representative and a copy sent to Network Rail within 24 hours of any such event.

#### **6.14 Storage and Clearance of plant equipment and materials**

All plant equipment and materials shall be kept safe and secure when not in use and shall be located as to avoid opportunity for trespass and vandalism on or directed against the Railway or land in the ownership of Network Rail.

### **7. Working Methods near the Railway**

#### **7.1 Use of Plant and Equipment Adjacent to the Railway Infrastructure**

No construction plant, equipment or materials shall be used or handled in such a manner that in the event of mishandling or failure they come within a vertical plane 3.0 meters from the nearest edge of the nearest rail on which trains may run or, on a station platform, within 3.0 meters of the platform edge unless previously proposed in a method statement which has been accepted by Network Rail's Representative. (refer to paragraph 8.3.1)

#### **7.2 Stability of Track**

Excavation near the Railway Infrastructure shall be in accordance with agreed method statements and not commence until all measures required to monitor and maintain the stability of the track and/or structure have been implemented and Network Rail's Representative has indicated that there is no further objection to proceeding with the excavation work.

#### **7.3 Emergency Action**

A detailed procedure for dealing with emergencies relating to the Work Site shall be produced in consultation with Network Rail's Representative. This procedure shall be accepted in writing by Network Rail before work starts and shall be reviewed and updated as circumstances vary. Key actions shall be set out on a poster to be prominently displayed in locations to be agreed with Network Rail's Representative. These must include the method of stopping trains in the event of an incident that could affect the safety of trains and/or persons and, in the case of an electrified line, how to arrange to have the current switched off.

All staff and operatives shall be made fully conversant with this procedure. Auditable checks should be undertaken at intervals agreed with Network Rail's Representative to monitor this understanding and evidence thereof shall be maintained on site and available for inspection by Network Rail's Representative.

#### **7.4 Rail Traffic during a Possession or Isolation**

During a possession it may be necessary for engineers, trains and/or on-track machines to pass through the Work Site by prior arrangement. This will necessitate the temporary clearance of the railway track and cessation of those activities that could affect their passage or the safety of personnel on or near the line.

### **8. Electrified Railways**

#### **8.1 Electric Traction Equipment**

Attention is drawn to the presence in some areas of electric traction equipment associated with either overhead line equipment above and at track level and/or third or fourth conductor rails at track level. Either system carries a potentially lethal electric current and the close proximity to this equipment can cause death or severe injury.

Warning notices acceptable to Network Rail shall be erected in prominent positions agreed by Network Rail's Representative.

All requirements as advised by Network Rail as to the earthing and bonding (or electrical segregation) of metalwork and foil covered sheet materials shall be complied with.

## **8.2 Robust Procedures for Safe Access and Safe Working Procedures**

Further robust procedures (in addition to those referred to in paragraph 2.2) shall be established and maintained to ensure safe access for all persons to the Railway Infrastructure and safe working practices where the Railway Infrastructure is electrified. These procedures must be submitted to Network Rail's Representative for written approval prior to the Works being undertaken.

## **8.3 Precautions**

Electric traction equipment is charged at high voltage and unless Isolation and permit to work arrangements are in force shall be treated as being live at all times and the following precautions shall be observed:

### **8.3.1 Overhead Line Equipment**

Work shall not be carried out, cranes or other plant erected, operated and/or dismantled or materials stored within the prohibited space which is that space within a radius of 3.0 metres of the live overhead equipment together with anywhere vertically above this space.

The figure of 3.0 metres used in determining the prohibited space shall be increased by the length of any tool, equipment and/or material being handled. However, work on the track, platforms, walkways and the like below the overhead equipment is permitted without special precautions provided that tools, equipment and/or materials are not at any time raised above head height.

Long objects, which shall include but not limited to, pipes, scaffolds, poles ladders and/or long handled tools or any object of such length that if carried vertically could infringe on the prohibited space shall be carried horizontally below head height.

Electrically conductive surveying equipment shall not be used within 3.0 metres of any overhead line equipment or any rail.

Any disturbance of or any attachment to any equipment forming part of the electric traction system shall only be carried out with the full consent of Network Rail.

### **8.3.2 Third or Fourth Rail Electrification**

Work in the vicinity of the third or fourth rail electrification will involve the provision of special protection or isolations to the equipment.

Electrically conductive surveying equipment shall not be used within 3.0 metres of any rail inducing electrified third rail.

## **8.4 Protective Screens**

At the sole discretion of Network Rail's Representative it may be appropriate for protective screens adjacent to overhead line equipment or third/fourth rail electrification to be provided to enable certain works to continue without Isolations being required.

#### **8.5 Crash Decks**

At the sole discretion of Network Rail's Representative it may be appropriate for crash decks to be provided to enable certain works to be carried out above the Railway without Possessions and/or Isolations being required.

#### **8.6 Temporary Access Structures**

At the sole discretion of Network Rail's Representative it may be appropriate for a temporary access structure above the overhead line equipment to be provided to permit continued working without Isolations being required.

#### **8.7 Erection and Removal of Screens and Platforms**

Erection, inspection, maintenance and removal of screening and/or platforms and/or access structures shall be carried out under the protection of Isolations and Possessions unless otherwise agreed by Network Rail.

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**Appendix 1N - Special Requirements in Relation to Cable & Wireless Worldwide**

*The terminology used in these special requirements shall have the meanings assigned to them as detailed in this section with the following amendments:*

**“Contractor”** means the Company as defined in the Agreement; and

**“Contract”** means the Agreement.

**“Company”** means Cable & Wireless Worldwide

Special requirements in relation to Cable & Wireless Worldwide are as follows:

**1. Introduction**

This document sets out the procedure that will apply when Other Parties intend or are undertaking works in the vicinity of Cable & Wireless Worldwide apparatus.

**2. Purpose of Document**

This document provides a means by which the Cable & Wireless Worldwide specific special requirements relating to their apparatus regardless of it being situated in the public highway / road, private street, land or any other areas is made aware to Other Parties.

**3. Scope**

This document will be presented to Other Parties or Contractors to encourage those undertaking works within the vicinity of Cable & Wireless Worldwide apparatus to refer to and comply with. This is in order to protect where necessary the Cable & Wireless Worldwide apparatus and to avoid damage to the apparatus and loss of service.

A National Joint Utilities Group (NJUG) document NJUG 9 titled “Recommendations for the Exchange of Records of Apparatus between Utilities” provides useful reference material.

It should be noted that, where appropriate, additional information on avoiding danger from underground apparatus is contained within the HSG47 guidance book titled “Avoiding Danger from Underground Services.”

**4. Cable & Wireless Worldwide Network and Apparatus**

Damage to Cable & Wireless Worldwide apparatus is extremely disruptive and can be expensive to repair, especially where long lengths of cable have to be replaced.

In order to maintain the network integrity and minimise disruption to service, it is essential that disturbances are absolutely minimal. When working within the vicinity of Cable & Wireless Worldwide apparatus, extreme care is necessary in order to avoid costly repairs. The Other Parties / Contractor shall make every effort to ensure that disturbance of Cable & Wireless UK apparatus is no more than is absolutely necessary for the completion of the works in accordance with their contract. It should be noted that

it is an offence to interfere with Cable & Wireless Worldwide apparatus without first contacting the company for advice.

## 5. Plant Records

It is the responsibility of the Other Parties undertaking works which may affect Cable & Wireless Worldwide apparatus to obtain all relevant Cable & Wireless Worldwide plant records from our agent Atkins Global prior to works commencing. This may be done by contacting the Atkins Global Plant Enquiries Team listed in section 19.

Plant records for such enquiries will generally be provided within 10 working days of receipt and in compliance with the New Roads and Street Works Act 1991 [NRSWA] requirements.

## 6. Definitions

The following definitions are applicable in this document:

1. "Apparatus" means all surface or sub-surface equipment and plant used by Cable & Wireless UK including any associated cables or ducts owned, leased or rented by Cable & Wireless Worldwide.
2. "Cable" means any polythene or other sheath containing optical fibres or metallic conductors.
3. "Depth of cover" means the depth from the surface to the topmost barrel of the duct nest, in the case of ducts encased in concrete, to the top of the concrete, and in the case of directly buried cable, the top of the cable.
4. "Jointing chamber" means any manhole, surface box or other chamber giving access to Cable & Wireless Worldwide apparatus or their network.
5. "Utility" means an organisation licensed to provide gas, water, electricity, Cable TV or telecommunications services.
6. "Developer" means an organisation licensed to develop industrial/residential premises or given licence to connect to utility apparatus.
7. "Contractor" means the individual, firm or company contracted to undertake the work for a Utility or Other Parties.
8. "Other Parties" means the Utilities, Highway Authorities, Developers, Street Authority (Roads Authority - Scotland).
9. "Site" means the location of, or in the vicinity of, the various works.

## 7. Requirements

Prior to commencing any work or moving heavy plant or equipment over any portion of the site, the Other Parties or Contractor shall notify Cable & Wireless Worldwide of their intentions. This may be done by contacting Cable & Wireless Worldwide, contact listed in section 19.

Upon receipt of this notification, Cable & Wireless Worldwide will identify if their apparatus is affected. If any Cable & Wireless Worldwide apparatus is affected by the works then they will arrange for the necessary records and confirm details of Cable & Wireless Worldwide apparatus and network operated within the affected area or adjacent to the proposed work site.

## 7.1 Location of Plant

It is the responsibility of the Other Parties or Contractors to undertake adequate plant location procedures. These may include searches for metallic cables which must be performed by actively inducing a signal in a cable conductor via a transmitter. A passive search is not considered sufficient.

Before applying a tracing signal to the Cable & Wireless Worldwide apparatus, the Other Parties or Contractors shall seek confirmation from Atkins Global that the Cable & Wireless Worldwide apparatus will not suffer any disruption to its networks normal workings as a result of the nature of the signal being induced.

## 7.2 Trial Excavations

Optic fibre cables are very susceptible to damage from excavation tools. They are not electrically conductive and cannot be located by radio induction methods. Once an approximate location is known, the exact location must be ascertained by means of hand dug pilot holes.

Where the work to be carried out by the Other Party or Contractor involves excavation in the vicinity of our clients' apparatus, the Other Party or Contractor shall, by trial excavation at his own expense, determine the exact location and depth of the Cable & Wireless Worldwide apparatus.

All excavations adjacent to the Cable & Wireless Worldwide apparatus are to be carried out by hand until the extent and /or location of the apparatus is known.

**All excavation work shall be executed in accordance with the current issue of Health and Safety series booklet HSG47, Avoiding danger from underground services.**

## 8. Depths of Cover

The Other Party or Contractor should note that the minimum depths of cover for Cable & Wireless Worldwide apparatus which shall be maintained together with specified separation requirements. Where the minimum depths of cover specified by Cable & Wireless Worldwide cannot be maintained, the Other Party or Contractor shall at their own expense, carry out the instructions of Cable & Wireless Worldwide requirements for the protection or diversion of their apparatus.

**The Other Party or Contractor should have particular regard to the possibility of encountering Cable & Wireless Worldwide apparatus (including ducts and cables), at depths of cover other than that reported.**

Surface cables (such as cables on bridges or walls) which are liable to be placed in danger from the Other Parties or Contractors works shall be protected, at the Other Parties expense, as directed by the Cable & Wireless Worldwide representative.

## 9. Separation

Reference should be made to HSG47 to ensure that adequate separation is achieved. The following details outline the specific requirements of Cable & Wireless Worldwide and capture the HSG47 requirements:-

### 9.1 High Voltage Cables

High voltage single core cables of 1000 V and above shall have a minimum clearance from Company Apparatus of 500 millimetres.

High voltage multi-core cables of 1000 V and above shall have a minimum clearance from Company Apparatus of 350 millimetres.

In exceptional circumstances where the above clearances cannot be maintained, the separating distance may be reduced to a minimum of 175 millimetres. In such circumstances, concrete, of a quality as directed by the Company Representative, must be inserted to completely fill the space between the High Voltage cable and the Company Apparatus, in accordance with the requirements of the Company Representative. Any further services must have a minimum clearance of 250 millimetres from the concrete.

## 9.2 Low Voltage Cables

Low voltage cables of less than 1000 V shall have a minimum clearance from Company Apparatus of 180 millimetres. In exceptional circumstances where the above clearance cannot be maintained, the separating distance may be reduced to a minimum of 75 millimetres.

In such circumstances, concrete, of a quality as directed by the Company Representative, must be inserted to completely fill the space between the services, in accordance with the requirements of the Company Representative. Any further services must have a minimum clearance of 250 millimetres from the concrete.

## 9.3 Ancillary Electrical Apparatus

Lamp posts, traffic posts and other such ancillary electrical apparatus shall have a minimum clearance of 150 millimetres from underground Company Apparatus and 600 millimetres clearance from above ground Company Apparatus.

## 9.4 High pressure gas mains and other Undertakers plant/equipment

High pressure gas mains shall have a minimum clearance of 450 millimetres from Company Apparatus. All other undertakers' plant and equipment, when running in parallel with Company Apparatus, shall have a minimum clearance of 200 millimetres. Where gas mains cross Company Apparatus, the minimum clearance shall be 200 millimetres. All other undertakers' plant and equipment, when running across Company Apparatus, shall have a minimum clearance of 100 millimetres. NJUG Volume 1, Guidelines on the positioning and colour coding of underground utilities' apparatus refers.

## 9.5 Other Undertakers plant

Other undertakers' plant and equipment which runs in parallel with Company Apparatus shall have a minimum clearance of 200 millimetres. All other undertakers' plant and equipment when running across Company Apparatus, shall have a minimum clearance of 100 millimetres.

## 9.6 Tramways



Each separating distance shall be individually agreed with the Company Representative.

## 10. Jointing Chambers

### 10.1 Protection

Footway type jointing chambers are not designed to withstand carriageway loadings.

Where such chambers are liable to be placed at risk, either temporarily or permanently, from vehicular traffic or from the movement of plant and/or equipment, they will need to be adequately protected. Alternatively, they may have to be demolished and rebuilt to carriageway standards, at the Other Parties or Contractors expense under supervision of Cable & Wireless Worldwide representative.

All Cable & Wireless Worldwide jointing chambers and / or other access points shall be kept clear and unobstructed. Access for vehicles, winches, cable drums and / or any further equipment required by Cable & Wireless Worldwide for the maintenance of its apparatus, must be maintained at all reasonable times.

### 10.2 Access

The covers to Cable & Wireless Worldwide jointing chambers and / or apparatus shall only be lifted by means of the appropriate keys and under the direct supervision of a Cable & Wireless Worldwide representative. Other Parties or Contractors shall not enter any Cable & Wireless Worldwide jointing chamber and / or apparatus unless under the supervision of a Cable & Wireless Worldwide representative and in any case not before the mandatory gas test has been carried out in the presence of Cable & Wireless Worldwide representative and such checks have shown it to be safe to enter the Cable & Wireless Worldwide chamber and / or apparatus. The Other Parties or Contractors shall be given reasonable access to Cable & Wireless Worldwide apparatus and chambers when required.

## 11. Notification Periods

Where the Other Parties or Contractors works or the movement of plant or equipment may endanger Cable & Wireless Worldwide apparatus, the Other Party or Contractor shall give the Cable & Wireless Worldwide agent Atkins Global at least 7 working days notice in writing of the intended date to commence operations.

No excavation should be made without first consulting the relevant Cable & Wireless UK apparatus layout drawings, which will be made available from the Cable & Wireless UK agent Atkins Global on request and allowing 28 working days for processing the relevant drawings. However, should this not be possible, direct contact should be made to the Atkins Global Bristol Plant Enquiries Team as soon as possible to assess the situation.

When excavating, moving or backfilling (including use of Foamed Concrete for Reinstatements – FCR) around Cable & Wireless Worldwide apparatus, Atkins Global (as agent for Cable & Wireless Worldwide) shall be given adequate prior written notice of the Other Parties or Contractors intentions, in order that the works may be adequately supervised. Such notice shall not be less than 3 working days.

## 12. **Excavation and Backfill**

All excavations adjacent to Cable & Wireless Worldwide apparatus are to be carried out by hand until the extent and or location of the Cable & Wireless Worldwide apparatus is known.

Use of mechanical borers and / or excavators shall not be used without the supervisory presence of a Cable & Wireless Worldwide representative or a given exemption.

Shuttering of the excavation or support to Cable & Wireless Worldwide apparatus, at the Other Parties or Contractors expense, shall be used as directed by the Cable & Wireless Worldwide representative.

At least 7 working days notice must be given to Cable & Wireless Worldwide in order that any special protective measures may be required to protect Cable & Wireless Worldwide apparatus, at the Other Parties or Contractors expense, when equipment such as pile driving, explosives, laser cutting high powered RF equipment or RF test gear, is to be used in conjunction with the works.

Other Parties or Contractors are advised to refer to the National Joint Utilities Group [NJUG] 4 Document which outlines the identification of small buried mains and services.

## 13. **Foam Concrete**

If foam concrete is being used as the backfill material, it shall not be used either above or within 500 millimetres of any Company Apparatus. A suitable material in accordance with the specification for the Reinstatement of Openings in Highways shall be substituted.

## 14. **Attendance of Company Representative**

If a situation requires the attendance on site of a Cable & Wireless Worldwide representative for a continuous period of more than 6 hours, suitable facilities shall be provided by the Other Party or Contractor, at their expense, to meet the office and ablution requirements. If a situation arises that requires urgent attention Cable & Wireless Worldwide will endeavour to attend site within 2 hours for all other occasions arising, 24 hours.

## 15. **Damage Reports**

In the event of any damage whatsoever occurring to our Cable & Wireless Worldwide apparatus, the Other Party or Contractor shall immediately inform Cable & Wireless Worldwide by contacting Julia Burgoyne, (for contact details please refer to section 19).

All relevant costs of any subsequent repair and / or removal of the Cable & Wireless Worldwide apparatus shall be charged to the Other Party or Contractor, irrespective of who affects the repair.

The above requirements do not relieve the Other Party or Contractor of any of their obligations under their contract.

## 16. **References**

The following reference materials relate to this document:

| <b>Document Number</b> | <b>Document Title</b>                                                                                     |
|------------------------|-----------------------------------------------------------------------------------------------------------|
| Volume B               | Generic Documents for Tendered and Period Contract Works for C&W.                                         |
| ISBN 0 10 542291<br>6  | New Roads and Street Works Act 1991                                                                       |
| 0 7176 1744 0          | HSG47 Avoiding Danger from Underground Services                                                           |
| NJUG 4                 | The Identification of Small Buried Mains and Services                                                     |
| NJUG 7                 | Recommended Positioning of Utilities' Apparatus for New Works on New Developments and in Existing Streets |
| NJUG 9                 | Recommendations for the Exchange of Records of Apparatus Between Utilities                                |
| ISBN 0-11-<br>552546-7 | Code of Practice for Recording of Underground Apparatus in Streets (010503)                               |

#### 17. Document History

| <b>Issue Status</b> | <b>Summary of Changes from Previous Version</b>                                        | <b>Date</b>     |
|---------------------|----------------------------------------------------------------------------------------|-----------------|
| 5                   | Major revision to incorporate omitted items from client's document<br>SOE 4461 Issue 7 | January<br>2003 |
| Issue 6             | Change doc reference from NRSWS to OSM                                                 | March 2002      |

#### 18. Office Address Details

|                                                                                                                                 |                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Glasgow Office<br>Cable & Wireless Worldwide<br>Pavillion 1<br>1 – 2 Berkeley Square<br>99 Berkeley Street<br>Glasgow<br>G3 7HR | Manchester Office<br>Cable & Wireless Worldwide<br>Unit M<br>Atlas Business Park<br>Wythenshawe<br>Manchester<br>M22 5RR |
| Bristol Office<br>Cable & Wireless Worldwide<br>Unit 1,<br>Tamar Road<br>St Philips                                             |                                                                                                                          |

|                    |  |
|--------------------|--|
| Bristol<br>BS2 0TY |  |
|--------------------|--|

**19. Street Works Team Contacts for Cable & Wireless Worldwide**

| Function                                                                                                                                                  | Name                       | Job Title                                   | Address                                                                                | Phone            | Mobile     | Fax                 | Email Address                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------------|----------------------------------------------------------------------------------------|------------------|------------|---------------------|--------------------------------|
| Co-ordination                                                                                                                                             | [REDACTED]                 | NRSA<br>Legislation<br>Officer              | n/a                                                                                    | [REDACTED]       | [REDACTED] | n/a                 | [REDACTED]                     |
| BCM – Business Continuity<br>Management                                                                                                                   | Complain<br>ts Team        | Complaints<br>Analyst                       | n/a                                                                                    | 0800 048<br>1411 | n/a        | n/a                 | complaintsteam@cw.com          |
| Liability Claims                                                                                                                                          | [REDACTED]                 | Major Incident<br>Resolution<br>Coordinator | Bristol Office<br>(see above)                                                          | [REDACTED]       | [REDACTED] | n/a                 | [REDACTED]                     |
| Diversionary Works                                                                                                                                        | [REDACTED]                 | Diversionary<br>Works Project<br>Controller | Manchester Office<br>(see above)                                                       | [REDACTED]       | n/a        | n/a                 | [REDACTED]                     |
| Emergencies (24 Hour) Faults and<br>Defects                                                                                                               | CMC                        | Customer<br>Management<br>Centre            | n/a                                                                                    | 08456<br>021585  | n/a        | n/a                 | n/a                            |
| Plant Enquiries - Cable & Wireless<br>Inc. Thus Plc, (formerly Scottish<br>Telecom), Your Comms (formerly<br>Norweb), Energis & Mercury<br>Communications | Plant<br>Enquiries<br>Team | n/a                                         | Atkins Global<br>PO Box 290<br>500 Aztec West,<br>Almondsbury,<br>Bristol,<br>BS32 4RZ | 01454<br>662881  | n/a        | 01454<br>66333<br>0 | Osm.Enquiries@atkinsglobal.com |



**Appendix 10 – NOT USED**

**Appendix 1P - Not Used**



**Appendix 1Q - NOT USED**

**Appendix 1R – NOT USED**

**Appendix 1S – NOT USED**

**Appendix 1T - Special Requirements in Relation to Trafficmaster**

*Terminology used in these special requirements shall have the meanings assigned to them as follows:*

**“Contractor”** means the Company as defined in the Agreement; and

**“Contract”** means the Agreement

**“Overseeing Organisation”** means

**1.) In these Special Requirements, the following terms shall have the Meanings assigned to them:**

- a.) ‘Company’ means Trafficmaster Ltd
- b.) ‘Company’s Representative’ means the Infrastructure Maintenance Manager or Designated Staff of the said ‘Company’ defined at 1.a of these Special Requirements or its’ Authorised Representatives and/or Agents.
- c.) ‘Apparatus’ means all surface or sub-surface equipment and plant including any associated cabling and/or ducting owned, leased or rented by the said ‘Company’ defined at 1.a of these Special Requirements.

- 2.) Before commencing any work or moving heavy plant or equipment over any portion of the site, the contractor shall confirm details of the Apparatus within the site with the Company’s Representative, who can be contacted at the following offices:

| ADDRESS                                                                                                    | TELEPHONE NUMBER | FAX NUMBER   |
|------------------------------------------------------------------------------------------------------------|------------------|--------------|
| [REDACTED]                                                                                                 | [REDACTED]       | 01234 759145 |
| [REDACTED]                                                                                                 | [REDACTED]       |              |
| Infrastructure Maintenance<br>Team<br>Trafficmaster Ltd<br>University Way<br>Cranfield<br>Beds<br>MK43 0TR |                  |              |

- 3.) Where such details show that the works or the movement of plant or equipment may endanger any Apparatus the Contractor shall give the Company’s Representative at least two months written notice, detailing how the works will affect apparatus, of the date on which it is intended to commence such works or the movement of plant or equipment in order that the presence of any sub-surface Apparatus, particularly surface running cabling, is adequately protected from damage and such protective measures shall be to the satisfaction of the Company’s Representative.

- 4.) In the event of a Company marker being disturbed for any reason it shall not be replaced other than in the exact position and to its former depth unless the repositioning is carried out at the direction and under the supervision of the Company's Representative.

- 
- 5.) The Contractor shall take particular care in relation to the protection of the Apparatus, where such Apparatus includes the presence of cameras and equipment boxes. The Contractor should particularly note that damage to such Apparatus is extremely disruptive to the Company network and costly to reinstate. The Contractor shall make every effort to avoid the disturbance of Apparatus more than is absolutely necessary for the completion of the works in accordance with the contract.
  - 6.) In the event that the planned works will result in a need for Apparatus to be removed, the Contractor must provide the Company with at least one month's notice in order to prepare the Apparatus for removal by the Company's Representative. In each case details of the planned works, including time scales, must be submitted to the Company in order to minimise disruption of the Company network.
  - 7.) When excavating, moving or backfilling around Apparatus, the Company's Representative shall be given adequate written notice, which shall not be less than one week, of the Contractor's intentions in order that he may supervise the works. The Contractor should note that the normal depth of cover for Apparatus and ducts is as follows:
    - a.) In carriageways 600 mm, which is to be maintained.
    - b.) In footways 450mm, which is to be maintained.

Where the 600/450 mm depth of cover cannot be maintained the Contractor shall carry out the instructions of the Company's Representative' for the protection of Apparatus and such actions that follow from the Company's Representative's instruction shall be supervised by the Company's Representative. Where the required depth of cover cannot be maintained over cabling, such cables as are affected shall be enclosed and protected in UPVC ducts to be supplied by the Company as directed by the Company's representative.

With regard to excavation in the vicinity of any Apparatus and ducts the Contractor shall have particular regard to the possibility of reduced cover and the encountering of Apparatus and ducts of cover less than that given at a.) and b.) above.

- 8.) All excavation adjacent to Apparatus shall be carried out by hand until the exact extent and/or location of Apparatus is known. Mechanical borers and/or excavators shall not be used within 1.0 metres of Apparatus without the supervisory presence of the Company's Representative. To prevent any movement of Apparatus during excavation, complete shuttering shall be used as directed by the Company's Representative if:
  - a.) Excavation is deeper than the depth of cover of adjacent Apparatus.
  - b.) Excavation is within 1.0 metres of Apparatus in stable soil.
  - c.) Excavation is within 5.0 metres of Apparatus in unstable soil.

If the after the completion of the works the Contractor intends to use any of the following:

- i.) Pile driving equipment within 10.0 metres of Apparatus.
- ii.) Explosives within 20.0 metres of Apparatus.
- iii.) Laser equipment within 10.0 metres of Apparatus.

the Contractor shall advise the Company's Representative, giving at least two weeks' notice, in order that any special protective measures for the Apparatus affected may be arranged.

- 9.) The covers to Company Apparatus shall only be opened by means of appropriate keys obtained from the Company's Representative and under the direct supervision of the Company's Representative. No employee of the Contractor or any sub-contractor employed by the Contractor shall enter any Apparatus of the Company unless under the supervision of the Company's Representative. The Company's Representative shall be given reasonable access to all Apparatus and Chambers when required.
- 10.) In the event of any damage whatsoever to the Apparatus, the Contractor shall immediately inform the Company, the Contracting Authority and (if required) the Emergency Services.
- 11.) Compliance with the above requirements shall not relieve the Contractor of any of his obligations under the contract.

**Appendix 1U - Special Requirements in Relation to BP**

Refer to the third party Agreement with BP and the following document:

CONDITIONS AND RESTRICTIONS FOR WORK ACTIVITIES IN CLOSE PROXIMITY  
TO BP PIPELINES (July 2009)



**Appendix 1V - Special Requirements in Relation to Shell**

Refer to the third party Agreement with Shell and the following document:

CONDITIONS AND RESTRICTIONS FOR WORK ACTIVITIES IN CLOSE PROXIMITY TO BP  
and SHELL PIPELINES May 2005



Aberdeen Western Peripheral Route / Balmedie-Tipperty  
AWPR / B-T Managing Agent, Aberdeen Business Centre,  
Willowbank House, Willowbank Road, Aberdeen AB11 6YG

Tel: **01224 332322** | Fax: **01224 322 361**

Email: [enquiries@awpr.co.uk](mailto:enquiries@awpr.co.uk) | Web: [www.awpr.co.uk](http://www.awpr.co.uk)

*Working in partnership*



# Aberdeen Western Peripheral Route / Balmedie - Tipperty

Competition for the Design, Build, Finance and Operation of the  
Aberdeen Western Peripheral Route / Balmedie - Tipperty

Volume Five

Schedule 2: New Works Requirements

Part 8: Liaison Procedures

709/ACP/600

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**SCHEDULE 2: NEW WORKS REQUIREMENTS**

**PART 8: LIAISON PROCEDURES**

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**SCHEDULE 2: NEW WORKS REQUIREMENTS**

**PART 8: LIAISON PROCEDURES**

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## **1 Community Relationships and Public Liaison**

### **1.1 Communications Protocols**

1.1.1 The Company's requirements to consult and comply with organisations and consultees during the Design, construction and completion of the New Works shall not be confused with the general communication requirements.

1.1.2 The delivery of all communications relating to the New Works shall be led by the Contracting Authority. The Company shall provide necessary support, as outlined in this Part 8 to the Contracting Authority in the implementation of all project communications from the Effective Date until the Full Services Commencement Date or the Termination Date as the case may be.

1.1.3 To enable the effective management and delivery of communications with external parties including but not limited to:

- (a) stakeholders;
- (b) communities; and
- (c) media.

the Company shall comply with the Contracting Authority's communications protocols and shall attend regular project communications meetings as defined in Section 1.5.

1.1.4 The Contracting Authority's communications protocols shall be developed in consultation with the Company immediately following the Effective Date. These communications protocols shall set out the clear roles, responsibilities and actions applicable to the Contracting Authority and the Company.

1.1.5 Upon the Effective Date and in the absence of the Contracting Authority's formalised communications protocols, the Company shall as a minimum provide the following:

- (a) a Community Liaison Officer as defined in Section 1.2;
- (b) a Community Liaison Team as defined in Section 1.3;
- (c) a fully implementable enquiries and complaints procedure, which can be further developed as part of the Community Liaison and Communication Procedures Plan as detailed in Section 1.4; and
- (d) a dedicated Freephone 24-hour contact 'hotline', as defined in Section 1.10.

### **1.2 Community Liaison Officer**

1.2.1 The Company shall appoint a Community Liaison Officer (CLO), who shall be the primary contact point for the Contracting Authority in relation to the Company's communications and community liaison responsibilities.

1.2.2 The CLO shall be a senior permanent employee within the Company's organisation, with a minimum of ten years' recent and relevant experience of community liaison on major infrastructure construction projects. This role shall be a full time position from the Effective Date until the Full Services Commencement Date or the Termination Date as the case may be. The approval of the Contracting Authority shall be obtained prior to the appointment of the Community Liaison Officer.

1.2.3 The CLO shall be responsible for ensuring that the Contracting Authority is alerted as soon as practicable to any matter, including any direct or indirect communication received,

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which may have an impact on the reputation of the New Works, the Company, the Contracting Authority or any of the Funding Partners.

1.2.4 The CLO shall be supported by the Community Liaison Team as defined in Section 1.3.

### **1.3 Community Liaison Team**

1.3.1 The Company shall appoint a Community Liaison Team (CLT), which as a minimum shall comprise four staff in addition to the CLO. The CLT shall be responsible for the efficient and professional handling of enquiries and complaints. The CLT shall also be responsible for the distribution of information to directly affected parties as agreed by the Contracting Authority and in accordance with the Community Liaison and Communications Procedures Plan defined in Section 1.4. Additional staff shall be incorporated into the CLT as may be necessary to fulfil the liaison requirements set out in this Part.

1.3.2 The CLT shall be headed by the CLO and shall have sufficient staff and equipment to carry out its responsibilities to a consistently high standard. This shall include appropriate expertise to support the various communication activities detailed in this Part 8.

1.3.3 Where the CLO is unavailable, the Company shall nominate a member of staff from the CLT to act as authorised deputy. Under such circumstances this member of staff shall fulfil the duties of the CLO and shall be the principal point of contact for the Contracting Authority.

1.3.4 The CLT shall include one or more individuals with specific responsibility for coordinating liaison with affected landowners, including reporting on progress with such liaison and issues arising.

### **1.4 Community Liaison and Communications Procedures Plan**

1.4.1 Within six weeks of the Effective Date, the Company shall submit a Community Liaison and Communications Procedures Plan (CLCP) to the Contracting Authority for approval.

1.4.2 The CLCP shall describe in detail how the Company shall support the Contracting Authority in the successful delivery of all project communications, in accordance with the Contracting Authority's requirements, and shall include, but not be limited to, the following information:

- (a) the Company's community liaison policy;
- (b) the Company's nominated community liaison personnel (including CLO and CLT);
- (c) a protocol governing all aspects of communications within the Company's organisation (including any and all consortium members and sub Companies) that adheres to the Contracting Authority's protocols defined in Section 1.1.4;
- (d) the Company's methodology for processing, recording and resolving observations, queries, enquiries and complaints from stakeholders, community groups, media, any other affected parties or the public;
- (e) a protocol for referring enquiries or complaints to the Contracting Authority in the event that the Company fails to resolve them to the satisfaction of the original enquirer or complainant;
- (f) plans for keeping owners / occupiers of nearby properties, businesses, community councils and other relevant parties who may be affected by construction of the New Works informed of potential disruption / mitigation



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including, but not limited to, traffic management and all construction of the New Works likely to have a noise, vibration or other impact on those parties;

- (g) Site contingency communication plans which provide procedures for dealing with emergency situations and other unforeseen events relating to the New Works, which may cause adverse publicity;
- (h) plans for supporting the communication of relevant general information on construction operations which may be of public interest; and
- (i) a Contact and Education Space management plan as defined in Section 1.9.

1.4.3 The Company shall ensure that all staff within its organisation, as well as any staff in sub-contracted organisations, adhere to the CLCP and that the CLO is notified of all enquiries, complaints or queries received.

## 1.5 AWPR/B-T Communications Group

1.5.1 The AWPR/B-T Communications Group shall be established by the Contracting Authority to manage all communications for the project. During the Design, execution and completion of the New Works, the AWPR/B-T Communications Group shall comprise:

- (a) the Contracting Authority and authorised Representatives; and
- (b) the CLO

1.5.2 Communications meetings shall be held monthly, unless otherwise directed by the Contracting Authority. The meeting shall be chaired by the Contracting Authority or his nominated representative and the CLO (or his authorised deputy) shall be in attendance.

1.5.3 A minimum of 48 hours in advance of any AWPR/B-T Communications Group meeting, the CLO shall submit in electronic format (Microsoft Word or compatible) the following information containing sufficient detail and notice, to allow quarterly forward planning of proactive and reactive communications activities:

- (a) milestones for the full construction programme (updated as appropriate);
- (b) a three month forward projection of anticipated sustained traffic management proposals;
- (c) a three month forward projection of any construction New Works or any construction related activities that are likely to cause disruption to the public; and
- (d) a monthly summary report of enquiries, correspondence, complaints and responses as detailed in the contacts log, particularly identifying any significant trends or issues that require further discussion and handling.

1.5.4 In order to allow immediate consideration and potential discussion at the next AWPR/B-T Communications Group meeting, the Company shall notify the AWPR/B-T Communications Group, as soon as practicable, of any Stakeholder, community group or media issues which:

- (a) are likely to be controversial;
- (b) are likely to attract national or regional interest;
- (c) are likely to affect any local community;
- (d) relate to trade press interest;
- (e) relate to public or private conferences and presentations; and/or
- (f) request or require a meeting or briefing.

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**1.6 General Communication Requirements****Public Statements and the like**

- 1.6.1 The Company shall not make any public statements, public announcements, speeches or presentations in relation to the New Works in whole, or in part, without prior written approval from the Contracting Authority. This includes, but is not limited to, participation at professional conferences and seminars as well as any statements to the media.

**Contact Persons Database**

- 1.6.2 The Contracting Authority shall retain and update a Contact Persons Database, which shall list contact details for any individual, household, group, business or the like, affected by the New Works. The Company shall provide a weekly report of new / updated contact information to the Contracting Authority to facilitate updates of the Contact Persons Database.
- 1.6.3 In accordance with 1.4.2(f), the Company shall be responsible for notifying owners / occupiers of nearby properties, businesses, community councils and other relevant parties regarding construction New Works that may affect them, a minimum of 14 days prior to work commencing on Site. The Contracting Authority shall approve the distribution list for mail drops based on the Contact Persons Database unless otherwise agreed in writing by the Contracting Authority. The distribution of all media by the Company shall be in accordance with Data Protection Laws.
- 1.6.4 All correspondence with owners / occupiers of nearby properties, businesses, community councils and other relevant parties who may be affected by construction New Works, shall be prepared by the Company and submitted to the Contracting Authority for agreement and approval, a minimum of 14 days prior to the intended date of issue.
- 1.6.5 The content and placement of any advertisement relating to the New Works shall be prepared by the Company and submitted to the Contracting Authority for agreement and approval, a minimum of 14 days prior to the intended date of publication.
- 1.6.6 In exceptional circumstances, where the 14 day timescale cannot be met, the Company shall ensure that the Contracting Authority is notified as soon as practicable. However, under no circumstances shall the Company issue correspondence or place an advertisement without prior approval from the Contracting Authority.
- 1.6.7 The CLO shall provide a comprehensive monthly construction progress update, written in plain English and supported with copy photographs and / or relevant information, to form the basis for project website updates, quarterly newsletters and monthly updates.
- 1.6.8 Project website updates, quarterly newsletters and monthly updates issued by the Contracting Authority shall distinguish between activities undertaken by the Company and those undertaken by associated parties in relation to the New Works.
- 1.6.9 The Company shall ensure that the information points, which have been established by the Contracting Authority and listed on the project website, are given relevant newsletters, flyers and the like throughout the duration of the project.

**Project Website**

- 1.6.10 The Company shall support the enhancement of the Contracting Authority's project website during Design, construction and completion of the New Works, to facilitate community liaison and communicate relevant New Works information. This shall include, but is not limited to, the use of multimedia and social media engagement tools as

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**Part 8: Liaison Procedures**

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appropriate. The Company shall also be expected to support any future advances in website related communications, which become available to the Contracting Authority during the contract period.

1.6.11 The Company shall not commission, host or maintain any website or other online communications channel relating to the project.

1.6.12 All photography, videos, webcams and the like shall be provided in accordance with Appendix 1/22 to the Specification.

**Quarterly Newsletter**

1.6.13 The Company shall procure and produce a quarterly newsletter. The quarterly newsletter content shall be provided to the Contracting Authority by the Company.

1.6.14 The Contracting Authority shall approve the final newsletter content and layout for issue. The anticipated layout shall be:

- (a) A4 size;
- (b) a minimum of 4 pages in length;
- (c) full colour print to a good quality standard; and
- (d) provided in PDF format for inclusion on the website.

1.6.15 The Company shall procure the printing of the quarterly newsletters. A minimum of 5,000 copies shall be printed each quarter and at the Contracting Authority's instruction. In exceptional circumstances, additional copies shall be printed in quarters where specific events or New Works are planned (maximum 10,000 copies in total).

1.6.16 The Company shall procure the distribution of the quarterly newsletters to identified contacts on the Contact Persons Database and to local libraries. The Company shall distribute the newsletter in electronic PDF format where requested. 1,000 copies of the quarterly newsletter shall be allocated to the Contracting Authority.

**Monthly Project Updates**

1.6.17 The Contracting Authority shall produce and issue regular electronic project updates (eZine) on a monthly basis or more frequently if necessary. The eZine content shall be provided by the Company.

1.6.18 The Contracting Authority shall compile the eZine and finalise the content and layout for issue.

1.6.19 The Contracting Authority shall procure the distribution of the electronic project update to specific email addresses identified on the Contact Persons Database and individuals signed up to the project website as necessary.

**Flyers**

1.6.20 The Company shall procure special flyers in advance of upcoming construction events which have a significant impact on the general public as identified by the Company, the Contracting Authority or the AWPR/B-T Communications Group.

1.6.21 The flyer content and layout shall be prepared by the Company and submitted to the Contracting Authority for agreement and approval, a minimum of 14 days prior to the intended date of printing.

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- 1.6.22 The Company shall procure the printing and distribution of the flyers. Prior to printing, the Company shall agree the quantity of flyers to be produced with the Contracting Authority.

**Material Branding**

- 1.6.23 All communications materials, including New Works Site signage, shall be produced in accordance with the corporate guidelines provided by the Contracting Authority and in accordance Appendix 1/21 to the Specification.
- 1.6.24 Project website updates, quarterly newsletters and monthly updates issued by the Contracting Authority, shall carry Contracting Authority approved corporate branding and include a Company logo as agreed by the Contracting Authority.
- 1.6.25 Any New Works related or Contracting Authority corporate branding produced by the Company shall be submitted to the Contracting Authority for agreement and approval in advance of public use to ensure consistency with the Contracting Authority's corporate branding guidelines.

**1.7 Meetings, Site Visits and Events**

- 1.7.1 The Company shall assist the Contracting Authority with the preparation of a draft invitation / notification list for any meetings and events, which shall be issued at the Contracting Authority's instruction, a minimum of 14 days prior to the proposed meeting date.
- 1.7.2 The CLO shall chair all attended meetings and briefings with community groups, affected parties and the like, unless otherwise agreed with the Contracting Authority. In addition, the Company shall be required to support, chair and input into meetings with stakeholders or the media where required by the Contracting Authority.
- 1.7.3 The Company shall supply to the Contracting Authority for agreement formal minutes of all discussions and actions arising from attended meetings or briefings, within 48 hours of the relevant meeting. The Company shall issue a copy of the agreed minutes to the AWPR/B-T Communications Group for review at their next meeting.
- 1.7.4 The Company shall facilitate all meetings within the Contact and Education Space defined in Section 1.1.9 unless otherwise agreed with the Contracting Authority. The Company shall be responsible for arranging the venue and providing presentation equipment as necessary.
- 1.7.5 At the request of the Contracting Authority, the Company shall facilitate New Works Site visits for Ministers, elected members and other dignitaries, stakeholders, community groups, media representatives, industry representatives and the like. The Company shall provide and maintain all necessary safety clothing and equipment. All visitor safety clothing shall be badged 'Visitor' on the back.

**1.8 Contacts Log**

- 1.8.1 The Company shall record all communications, correspondence, enquiries, complaints, and responses with any stakeholders, community groups, media, affected parties and the like, within a contacts log, which shall be maintained throughout the Design, construction and completion of the New Works.
- 1.8.2 The contacts log shall be maintained in electronic format (Microsoft Excel or other compatible software) and for all communications, correspondence, enquiries, complaints and responses, shall include as a minimum:

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- (a) date received / responded;
- (b) geographic area from where the communications, correspondence, enquiries or complaints originated;
- (c) nature of enquiry / complaint / response;
- (d) name of employee who received the communication;
- (e) name of employee dealing with response; and
- (f) current status.

1.8.3 The Company shall update the log as necessary to include:

- (a) the measures taken to investigate, deal with or address communications, correspondence, enquiries or complaints; and
- (b) the timescale taken to respond to or address communications, correspondence, enquiries or complaints.

1.8.4 Complaints shall be accurately noted in the contacts log as received and the Company shall advise the Contracting Authority as soon as practicable of all key communications received. The contacts log shall form the basis of the summary for the monthly report at the AWPR/B-T Communications Group meetings.

1.8.5 The Company shall ensure that the contacts log is prepared in a manner that enables information regarding complaints as follows to be categorised for separate discussion with the Local Authority or Traffic Management Group as appropriate

- (a) noise and vibration;
- (b) dust or air pollution; and/or
- (c) traffic management.

1.8.6 Notwithstanding the requirements of Section 1.5.3, the Company shall provide to the Contracting Authority on a monthly basis detailed and summary information from the contacts log for its use by the Contracting Authority as appropriate.

## **1.9 Contact and Education Space**

1.9.1 The Contracting Authority will provide a Contact and Education Space for the Project which will be located within the Company's main New Works Site office. The Contact and Education Space will be commissioned and available for occupation by 01 April 2015 at the latest.

1.9.2 The Company responsibilities in relation to this facility, in addition to those listed in the Schedule 2 Part 4, and its operation shall include, but not be limited to, the following provisions:

- (a) appropriate furniture
- (b) appropriate staff, including Contact Liaison Officers;
- (c) a live link, via a secure telecommunications system, to project web cams located in proximity to the Site (refer to Appendix 1/22 to the Specification);
- (d) operation and maintenance of the building to current health and safety regulations, including the provision and replacement of all necessary signage and leaflets;
- (e) first aid kits;

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- (f) procurement of secure high speed broadband wifi telecommunication supplies suitable for use by visitors and staff;
- 1.9.3 The Company shall operate, the Contact and Education Space from 01 April 2015 until 12 weeks after the Full Services Commencement Date or until the Termination Date.
- 1.9.4 Prior to the Contact and Education Space becoming available for use, and within four weeks of the Effective Date, the Company shall facilitate a temporary space within the Company's temporary New Works Site offices.
- 1.9.5 The Contact and Education Space shall be open to the general public between the hours of 0900 and 1730 Monday to Friday, and 1000 and 1600 Saturday.
- 1.9.6 On occasion and at the request of the Contracting Authority, the Company shall be required to operate and staff the Contact and Education Space out with the opening hours defined in Section 1.9.5 to accommodate particular evening or weekend events, including community meetings and the like.
- 1.9.7 The Contact and Education Centre shall act as an information and access point for the Aberdeen Western Peripheral Route/Balmedie – Tippetry project.
- 1.9.8 The Contact and Education Space shall be staffed by a minimum of one representative from the Company (from the CLT) representative at all times. The Company shall ensure 'hot desk' facilities are provided within the Contact and Education Space for the Contracting Authority and / or its Representatives and there shall be sufficient CLT staff to provide adequate coverage for the opening hours defined in Section 1.9.5.
- 1.9.9 A CLO and CLT shall be responsible for liaising with the Contracting Authority in relation to the arranging and booking of visits, the arranging of suitable catering for each visit, updating wall displays and other presentation materials and undertaking presentations on the progress of the New Works. The Company or Contracting Authority shall assist with specific technical presentations as agreed from time to time. The Contact and Education Space shall cater for drop in visitors in addition to the organised sessions arranged for interest groups.
- 1.9.10 The CLO staff based at the Contact and Education Space shall coordinate effectively to ensure efficient and successful responses to any enquiries or complaints.
- 1.9.11 The Contact and Education Space shall share its reception with the Company's main New Works Site office and shall be staffed by the Company's reception staff. This staff member shall act as a first point of contact for any visitors to the Space and shall direct them to the appropriate CLO for the specific query or complaint. The Company's CLT shall support the Contracting Authority's staff member during busy periods.
- 1.9.12 In the event that that there is an enquiry or complaint related to New Works and the relevant CLO is mobilised on the New Works Site, the Company's reception staff member shall contact the relevant CLO by telephone.
- 1.9.13 The Company shall develop high quality information materials for the Contact and Education Space describing the New Works and giving relevant information on the project in plain and accessible English. The materials for the Contact and Education Space shall be agreed and approved by the Contracting Authority and maintained and updated by the Company to reflect progress on the New Works throughout the project lifetime. These materials shall include, but are not limited to:
- (a) information panels to accommodate provision for a minimum of 30 A0 boards;
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- (b) video overview(s) of the project with relevant updates during the period of the New Works, with appropriate hardware (DVD or PC) to play the video overview(s);
- (c) a high performance laptop computer capable of operating the Virtual Reality Model as described in 1.13;
- (d) a live link to web cams / timelapse cameras installed on the New Works Site in accordance with Appendix 1/22; and
- (e) a sufficient stock of literature for visitors to take away, such as leaflets and newsletters.

1.9.14 The Company shall maintain and operate the permanent Contact and Education Space such that it complies with all relevant legislation including the *Construction (Health, Safety and Welfare) Regulations 1996*, the *Electricity at Work Regulations 1989*, the *Disability Discrimination Act 2005*, and the *Equality Act 2010*.

### **1.10 Freephone 24-hour contact 'hotline'**

1.10.1 The Company shall establish a dedicated Freephone 24-hour telephone contact 'hotline' in addition to an email address, fax number and postal address to deal with queries or complaints from the general public. These contact details shall be exhibited on all New Works Site notices or information boards, correspondence, newsletters, flyers and the like.

1.10.2 The Company shall establish operating and management procedures for the 24-hour 'hotline' within the CLCP.

1.10.3 The 24-hour 'hotline' shall be manned by the Company at all times. Outwith normal working hours as defined in Section 1.9.5 the 'hotline' shall be staffed by a dedicated on-call contact person from the CLT. During exceptional circumstances and in agreement with the Contracting Authority, the 'hotline' can, as a minimum, be provided by means of a high quality call centre service that is accredited by a recognised customer call-centre industry body.

1.10.4 All issues, queries or complaints received via the 24-hour 'hotline' shall be logged in the contacts log and shall be dealt with in accordance with the communications protocols defined in Section 1.1. As a minimum, the Company shall ensure that all calls are responded to within 24 hours giving a holding response if necessary, with all responses logged in the contacts log.

1.10.5 In general, responses to complaints or queries shall be prepared by the Company, approved by the Contracting Authority and issued by the Company unless otherwise instructed. However, where a recurring complaint or query arises and a previous response has been approved by the Contracting Authority and issued by the Company, the CLT shall issue a response without referral to the Contracting Authority.

1.10.6 The Company shall be responsible for resolving complaints or queries related only to its area of responsibility. Issues, queries or complaints received via the 24-hour 'hotline' that are not related to the Company shall be:

- (a) detailed in the contacts log;
- (b) re-routed to the relevant person within the Contracting Authority as soon as practicable.
- (c) re-routed to the Contracting Authority immediately if the enquiry is from a representative of the media.

## 1.11 Stakeholder and Media Communications

1.11.1 The Contracting Authority shall be responsible for all stakeholder communications on all aspects of the New Works including, but not limited to:

- (a) political (MPs, MSPs, MEPs, Ministers, local councillors, council officials);
- (b) operational stakeholders (utilities, emergency services, etc);
- (c) statutory bodies (including community councils);
- (d) environmental groups; and
- (e) industry stakeholders.

unless otherwise specified in Section 1.11.5, and a detailed list of the stakeholder contacts within each category shall be included as part of the communication protocols defined in Section 1.1.1.

1.11.2 The Contracting Authority shall be responsible for all community, local, regional, national and international media communications on all aspects of the New Works including, but not limited to:

- (a) print (newspapers);
- (b) broadcast (TV and radio);
- (c) technical (trade media including journals); and
- (d) online (online versions of above media, blogs, social media).

1.11.3 The Company shall ensure that the Contracting Authority is notified immediately of any media enquiry and the protocols for referral of media interest and publicity procedures shall be included as part of the communication protocols defined in Section 1.1.

1.11.4 The Contracting Authority shall be responsible for the co-ordination of all responses to stakeholders, media and the like unless otherwise specified in Section 1.11.5, and at the request of the Contracting Authority, the Company shall provide assistance with responses where necessary.

1.11.5 The Company shall be permitted by the Contracting Authority to communicate directly with a stakeholder (e.g. agreed local authority officials) where delegated authority is written into the communication protocols defined in Section 1.1. In this instance, the Contracting Authority must agree and approve any communication or response prior to issue by the Company.

1.11.6 The Contracting Authority shall authorise and undertake any meetings or briefings with stakeholders, media and the like. At the request of the Contracting Authority, the CLO and / or other senior specialist personnel shall be made available by the Company to attend such meetings or briefings and provide expert assistance.

## 1.12 Community Communications

1.12.1 The Company shall be responsible for all community communications relating to all aspects of the New Works, in accordance with Section 1.1 of this Part 8 including, but not limited to:

- (a) local (affected) residents;
- (b) residents associations;
- (c) community groups and associations (unless otherwise defined in Section 1.1.3);



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- (d) recreational user groups;
- (e) local (affected) businesses; and
- (f) wider community including non-local commuters and businesses using the existing road network in the vicinity of the New Works.

A detailed list of the community contacts within each category shall be included as part of the communication protocols defined in Section 1.1.3.

- 1.12.2 The Company shall be responsible for communicating directly with a community group unless otherwise specified in the communications protocols defined in Section 1.1. In this instance and at the request of the Contracting Authority, the Company shall provide assistance with responses where necessary.
- 1.12.3 The Contracting Authority shall authorise and undertake any meetings or briefings with statutory community groups, including community forums and other pre-defined / agreed groups unless the Contracting Authority delegates authority to the Company to undertake these on its behalf. At the request of the Contracting Authority, the CLO and / or other senior specialist personnel shall be made available by the Company to attend such meetings or briefings and provide expert assistance.

### **1.13 Virtual Reality Model**

- 1.13.1 The Contracting Authority has produced Virtual Reality Models (VRM) based on the Stage 3 Designs defined within the Aberdeen Western Peripheral Route and Balmedie – Tippetty Environmental Statements.
- 1.13.2 The Company shall procure a licence which shall permit the Company to run the existing VRM on a suitable PC with a 42" LED monitor within the Contact and Education Space.



Aberdeen Western Peripheral Route / Balmedie-Tipperty  
AWPR/B-T Managing Agent, Aberdeen Business Centre,  
Willowbank House, Willowbank Road, Aberdeen AB11 6YG

Tel: **01224 332322** | Fax: **01224 322 361**

Email: [enquiries@awpr.co.uk](mailto:enquiries@awpr.co.uk) | Web: [www.awpr.co.uk](http://www.awpr.co.uk)

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