A90/A96 HAUDAGAIN IMPROVEMENT

VOLUME 3 OF 6

EMPLOYER'S REQUIREMENTS

PART 2 – SCHEME SPECIFIC REQUIREMENTS

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A90/A96 HAUDAGAIN IMPROVEMENT
CONTRACT NUMBER TS/MTRIPS/WKS/2017/04

CONTRACT WORKING ISSUE

VOLUME 3 OF 6

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TRANSPORT SCOTLAND
A90/A96 HAUDAGAIN IMPROVEMENT

TS/MTRIPS/WKS/2017/04

CONTRACT WORKING ISSUE

VOLUME 3 OF 6

EMPLOYER'S REQUIREMENTS

PART 2 - SCHEME SPECIFIC REQUIREMENTS

DOCUMENT ISSUE RECORD

I hereby confirm that this is the current version of the Employer's Requirements and supersedes all previous issues of such document by the Employer.

Signed .....

Name (Block capitals) .....

Date .....

Contractor _____

Copy of signed page shall be sent to, Transport Scotland, **[REDACTED]**

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A90/A96 HAUDAGAIN IMPROVEMENT
VOLUME 3 OF 6
EMPLOYER'S REQUIREMENTS
PART 2 – SCHEME SPECIFIC REQUIREMENTS
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1. GENERAL REQUIREMENTS

1.1 Introduction

1.1.1 This document, Part 2 to these Employer's Requirements, has been compiled to provide the Scheme Specific Requirements for the A90/A96 Haudagain Improvement. It should be read in conjunction with the General Requirements outlined in Part 1 to these Employer's Requirements and the Appendices to these Employer's Requirements outlined in Part 3.

1.2 Design

1.2.1 Refer to Part 1 – General Requirements.

1.3 Construction

1.3.1 Refer to Part 1 – General Requirements.

1.4 General Requirements

1.4.1 Refer to Part 1 – General Requirements.

1.5 Provision of Records and Information

1.5.1 Refer to Part 1 – General Requirements.

1.6 Disruption During Construction

1.6.1 Refer to Part 1 – General Requirements.

1.7 Temporary Traffic Management Schemes

1.7.1 The relevant roads authorities for the Design, construction, completion and maintenance of the Works are:

(i) Aberdeen City Council

Contact: [REDACTED]

Email: [REDACTED]

Telephone Number: [REDACTED]

in connection with the local road network.

(ii) BEAR Scotland Limited

Contact person: [REDACTED]

Email: [REDACTED]

Telephone Number: [REDACTED]; and

(iii) Transport Scotland, Trunk Roads and Bus Operations

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

in connection with the trunk road network.

1.7.2 Consultation with Police Scotland shall be through:

(i) Contact Person: [REDACTED]

Email: [REDACTED]

Telephone Number: [REDACTED]

1.8 Further Requirements

1.8.1 Network Rail

1.8.1.1 Consultation with Network Rail shall be through:

(i) Contact person: [REDACTED]
Email: [REDACTED]
Telephone Number: [REDACTED]

1.9 Sustainability

1.9.1 Contact details in connection with the Transport Scotland Carbon Management System ("CMS") are:

(i) Transport Scotland, Environmental Branch
Contact Person: [REDACTED]
Email: [REDACTED]
Telephone Number: [REDACTED]

1.9.2 Green Travel Plan

1.9.2.1 The Contractor shall prepare and implement a "Green Travel Plan" (GTP) which shall seek to reduce the effects of construction staff travelling to and from the Site or otherwise in connection with the Works on the road network.

1.9.2.2 Travelling by car-share, public transport, and walking/cycling for the workforce shall be promoted wherever practicable.

1.9.2.3 The Contractor shall use communication tools such as toolbox talks to promote sustainable travel and provide suitable incentives to his workforce to travel by sustainable means.

1.9.2.4 Periodic monitoring shall be undertaken to assess the percentage of workforce commuting by private vehicles and by more sustainable means, and to analyse trends and changing behaviours.

1.9.2.5 Notwithstanding any other provision of the Contract the Contractor shall provide to the Engineer or the Employer such information as the Engineer or the Employer may reasonably require to demonstrate the Contractor's compliance with this Section 1.9.2.

1.10 Communications

1.10.1 General

Community Liaison Officer

1.10.1.1 The Contractor shall appoint a Community Liaison Officer ("CLO"), who shall be the primary contact point for the Employer in relation to the Contractor's communications and community liaison responsibilities.

1.10.1.2 The CLO shall have recent and relevant experience of community liaison on major infrastructure construction projects. This role shall be a full time position from the Date for Commencement of the Works until the issue of the Certificate of Completion for the Whole of the Works.

1.10.1.3 The CLO shall be responsible for ensuring that the Employer is alerted as soon as practicable to any matter (including any direct or indirect communication received), which may have an impact upon the reputation of the Works, the Contractor, or the Employer.

1.10.1.4 If this level of resource is insufficient to deal with the number of enquiries in the required timescale then it is incumbent upon the Contractor to introduce

additional personnel to assist until the response time is consistently being met.

1.10.1.5 The Contractor shall be required to submit curriculum vitae of the proposed CLO and any other personnel acting in support of this role to meet the requirements of Clause 1.10.1.4 to the Employer for approval.

1.10.1.6 The CLO shall be expected to have business cards.

Communication Implementation Plan

1.10.1.1 The Communication Implementation Plan shall detail how the Contractor shall meet the communications requirements of the Contract including but not limited to Part 1 section 1.10 and Part 2 section 1.10 of the Employer's Requirements and the Employer's Communications Protocol.

1.10.1.2 The Contractor shall be required to provide the Employer with a Communications Implementation Plan within 4 weeks of notification of award of contract.

1.10.2 Communications Meetings

1.10.2.1 At least 5 days in advance of any communications meeting, the Contractor shall submit in electronic format (Microsoft Word or compatible), to the Employer the following information containing sufficient detail and notice to allow quarterly forward planning of proactive and reactive communications activities:

(i) milestones for the Works construction programme (updated as appropriate);

(ii) a three-month forward projection of anticipated sustained traffic management proposals;

(iii) a three-month forward projection of any construction works or any construction related activities that are likely to cause disruption to the public;

(iv) a monthly summary report of enquiries, correspondence, complaints and responses as detailed in the contacts log defined in Section 1.10.5 of Part 1, particularly identifying any significant trends or issues that require further discussion or handling; and

(v) any forthcoming activities which may be controversial and / or may be of interest to the media.

1.10.3 General Communications Requirements

Newsletter

1.10.3.1 The final newsletter content and layout shall be provided to the Employer for approval. The standard anticipated layout is as follows:

(i) A4 size;

(ii) a minimum of 4 pages in length;

(iii) full colour print to a high quality standard; and,

(iv) provided in .pdf format for inclusion on the project website.

The standard layout may be subject to change based on the volume and nature of the works and will be agreed with the Employer prior to publication.

1.10.3.2 The number of copies to be printed shall be subject to the approval of the Employer (maximum 1,000 copies in total per newsletter).

1.10.3.3 The newsletter shall be produced and procured quarterly.

1.10.4 Publicity Sign Boards

1.10.4.1 The Contractor shall provide 3 publicity sign boards.

1.10.5 Meetings, Events and Site Visits

1.10.5.1 At the request of the Employer, the Contractor shall be asked to facilitate a minimum of 5 media events to the Site for Ministers and other dignitaries. The Contractor shall also facilitate other visits to the Site for stakeholders, community groups, media representatives, industry representatives and the like. The Contractor shall provide and maintain all necessary safety clothing and equipment to allow these visitors to access the site in compliance with site rules.

1.10.5.2 The Contractor shall facilitate meetings, site visits and events within the Contractor's main site compound as required. The Contractor shall provide high quality information boards for use in the conference room, which shall feature information about the project and shall remain in the room when not in use.

1.10.5.3 The CLO shall be responsible for liaising with the Employer in relation to the arrangement and booking of visits, the provision of suitable catering for each visit, updating wall displays and other presentation materials and undertaking presentations on the progress of the Works. Catering shall be provided by the Contractor which shall consist of tea, coffee, biscuits and the like, and where requested by the Employer, a light lunch buffet.

1.10.5.4 The Contractor shall assist the Employer issuing the draft invitation/notification list for meetings and events as outlined in Part 1 section 1.10.4.1 a minimum number of 14 days prior to the proposed meeting date.

1.10.5.5 The Contractor shall supply to the Employer for agreement formal minutes of all discussions and actions arising from attended meetings or briefings, within 48 hours of the relevant meeting. The Contractor shall issue a copy of the agreed minutes to the Employer for review 7 days prior to the next communication meeting.

1.10.5.6 The Employer may require the Contractor to provide and facilitate two public drop-in events which shall include an exhibition area for up to 100 people and a separate break-out area for staff and meetings with individual members of the public and / or stakeholders, if required. The Contractor shall also:

(i) provide a minimum of 5 high quality A1 information boards, including relevant information relating to the proposed Works. These must include but not limited to activities likely to impact on landowners and the general public, including traffic management proposals and timescales;

(ii) provide personnel to attend the event, including the CLO and 3 other members of the Contractor's organisation with suitable knowledge of the Works;

(iii) develop a printed summary leaflet of the exhibition panels so members of the public can take these away. Sufficient quantities should be printed so attendees can take extra copies for neighbours and other members of the community unable to attend;

(iv) provide a feedback form for the public to complete at the event or return by a later specified date; and

(v) successfully promote the drop-in event, starting at least two weeks in advance. Tactics must include printed posters distributed to key community locations, advertising in local press and other necessary tactics to make the community aware the event's happening.

1.10.6 Education Programme

1.10.6.1 The Contractor shall be required to provide an education programme by providing a minimum of 4 man days support per annum to events organised by the Contractor or Employer in local schools.

1.10.6.2 Contractor support may include but not be limited to:

(i) Careers presentations or advice;

(ii) Technical talks including safety talks;

(iii) Site visits.

The Contractor shall be required to seek prior approval from the Employer for any education related activities he chooses to undertake.

2. DESCRIPTION OF THE DESIGN AND THE WORKS

2.1 General Scheme Details

2.1.1 The full scope of the Design, construction, completion and maintenance of the Works and the obligations of the Contractor, including the Contractor's obligations to remedy any defects in the Works, shall be ascertained by reference to the Contract.

3. SITE INFORMATION

3.1 Land Made Available by the Employer for the Works

3.1.1 Contact details in connection with the location of the permanent fencing and Accommodation Works fencing for:

the Land Made Available by the Employer for the Works; and, if relevant;

additional land as described in Section 3.1.2. of Part 1 of these Employer's Requirements are:

(i) Transport Scotland, Major Transport Infrastructure Projects

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

3.2 Permissions and the Like

3.2.1 Not used.

3.2.2 The Contractor shall consult and comply with the requirements of:

(i) Scottish Environment Protection Agency (SEPA)

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

in connection with complying with the requirements of The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) (CAR) (including all relevant General Binding Rules) and referenced (Scottish Government, 2013) and The Water Environment (Miscellaneous) (Scotland) Regulations 2017, and with respect to obtaining the necessary Permissions and the like to enable the Design, construction, completion and maintenance of the Works.

The Contractor shall obtain all relevant Permissions and the like as required under CAR and The Water Environment (Miscellaneous) (Scotland) Regulations 2017 including but not limited to a CAR Construction Site Licence in advance of undertaking any works as defined in the Regulations. The Contractor shall assume the role of Responsible Person and complete a Pollution Prevention Plan as defined in SEPA WAT-SG-75.

Where activities do not fall within the remit of the CAR Construction Site Licence, the Contractor shall ensure compliance with the relevant CAR General Binding Rules (in particular General Binding Rules 2, 6, 9, 10, 11 and 15).

(ii) Aberdeen City Council

Contact Person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

in connection with compliance with the requirements of planning regulations and the like with respect to obtaining the necessary Permissions and the like to enable the Design, construction, completion and maintenance of the Works.

3.2.3 Subject to the other requirements of the Contract, the normal working hours shall be in accordance with Appendix 1/9 of the Specification. Contact details in connection with working hours and the control of noise and vibration are:

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

3.3 Access to the Site

3.3.1 Refer to Part 1 – General Requirements.

3.4 Maintenance of Existing Public Roads within the Site

3.4.1 The authorities responsible for all routine, cyclic and winter maintenance of existing public roads and existing NMU facilities within the Site, together with undertaking emergency response procedures and actions are:

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

(ii) BEAR Scotland Limited

Contact person: [REDACTED]

Email: [REDACTED]

Telephone Number: [REDACTED]

3.5 Statutory Orders

3.5.1 Refer to Part 1 – General Requirements.

3.6 Accommodation Works

3.6.1 Refer to Part 1 – General Requirements.

3.7 Public and Private Roads, Accesses and Public/Private Rights of Way

3.7.1 Contact details in connection with alterations to public and private roads are:

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

Contact details in connection with alterations to accesses and public/private rights of way are:

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

(ii) the relevant landowners as identified in Appendix 1/15.

3.8 Site Security

3.8.1 Contact details for Police Scotland are:

(i) Police Scotland

Contact Person: [REDACTED]

Email: [REDACTED]

Telephone Number: [REDACTED]

3.8.2 The Contractor will be responsible for providing security to properties [REDACTED] for the duration of the contract. The Contractor shall maintain the buildings in a safe, secure and weatherproof condition. The properties may be required to be checked for and repair of burst pipes during winter or ensure that the properties have been adequately drained down. The Employer will remove existing security doors currently in place at the properties within one week of contract award.

4. DESIGN CRITERIA

4.1 Standards

4.1.1 Not Used.

4.1.2 Contact details in connection with the Design for the side roads, as identified in Appendix A of Part 3 of these Employer's Requirements, are

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone: [REDACTED]

4.2 Road Design Criteria

4.2.1 Road Design Standard

4.2.1.1 Junctions

The Design shall ensure that:

(i) Junctions and accesses between the following Reference Points as shown on drawing B1557630/CD/REF/001 shall be designed in accordance with the Design Manual for Roads and Bridges:

(a) R01 to R06;

(b) L01 to L02; and

(c) R07 to R12.

All other junctions and accesses shall be designed in accordance with Aberdeen City Council's 'Guidelines and Specifications for Roads within Residential and Industrial Developments (1998)';

(ii) The following junctions, located between Reference Points L01 and L02 as shown on drawing 1557630/CD/REF/001, shall be signal controlled and shall be designed in accordance with TD50/04 of the Design Manual for Roads and Bridges;

(a) Dual Carriageway Link Road / A90 North Anderson Drive Junction,

(b) Dual Carriageway Link Road / Realigned Manor Avenue / Logie Avenue Junction, and

(c) Dual Carriageway Link Road / A96 Auchmill Road Junction;

(iii) The existing signalised junction between the A90 North Anderson Drive and Hilton Drive shall be retained at its current location and upgraded as necessary in order to accommodate the Works. Existing traffic signal equipment shall be replaced with new and the junction shall be controlled in conjunction with the Dual Carriageway Link Road / A90 North Anderson Drive Junction;

(iv) Junctions shall have sufficient capacity to satisfy the junction performance criteria specified in Appendix U;

(v) Notwithstanding the requirements of paragraph 4.2.1.1 (iii), junctions shall be designed and operated to minimise delay and disruption to road users; and

(vi) Existing traffic movements shall be maintained and provision made to link the existing and new road infrastructures.

4.2.1.2 Closure of Existing Roads, Junctions, Lay-bys and Accesses

The Design shall ensure that:

(i) Manor Terrace shall be permanently removed;

(ii) The existing junction between Manor Avenue and the A90 North Anderson Drive shall be permanently removed;

(iii) The existing junction between Manor Drive and the A96 Auchmill Road shall be permanently removed;

(iv) The existing junction between Logie Terrace and Manor Avenue shall be permanently removed;

(v) The existing junction between Logie Place and Logie Avenue shall be permanently removed;

(vi) The existing junction between Logie Avenue and Manor Drive shall be permanently removed;

(vii) The existing access from Manor Drive to the car park located to the south of the properties at 857 to 919 Great Northern Road shall be permanently removed; and

(viii) The existing access from Manor Drive to the properties at 438 and 440 Auchmill Road shall be permanently removed.

4.2.1.3 Lay-bys

The Design shall ensure that:

(i) All bus lay-bys shall be designed in accordance with Aberdeen City Council's 'Guidelines and Specifications for Roads within Residential and Industrial Developments, September 1998' and Transport Scotland's 'Roads for All: Good Practice Guide for Roads, July 2013'.

4.2.1.4 Accesses

The Design shall ensure that:

(i) Direct accesses to trunk roads shall be designed in accordance with TD41/95 of the Design Manual for Roads and Bridges.

4.2.1.5 Side Roads

Notwithstanding any other provision of the Contract, the Design for the side roads listed in Appendix A of Part 3, except the Dual Carriageway Link Road, shall be in accordance with the requirements of Aberdeen City Council's Guidelines and Specifications for Roads within Residential and Industrial Developments (1998). Notwithstanding any other provision of the Contract, the Dual Carriageway Link Road shall be in accordance with the requirements of the Design Manual for Roads and Bridges.

4.2.1.6 Provision for Non-Motorised Users (NMU) (pedestrians, cyclists, equestrians and the like)

The Design shall ensure that:

(i) The existing pedestrian crossings at the existing junction between the A90 North Anderson Drive and Hilton Drive shall be upgraded in accordance Transport Scotland's 'Roads for All: Good Practice Guide for Roads, July 2013'.

(ii) The existing pedestrian crossing located on the A90 North Anderson Drive at Hilton Drive shall be permanently removed. All infrastructure directly related to the pedestrian crossing shall also be removed, including but not limited to; traffic signals, pedestrian signals, traffic signs, road markings, dropped kerbs and tactile paving. All gaps in the

pedestrian barrier associated with the redundant pedestrian crossing shall be infilled with a similar type of pedestrian barrier to the adjacent lengths.

(iii) All pedestrian barrier shall be in accordance with Transport Scotland's 'Roads for All: Good Practice Guide for Roads, July 2013'.

Contact details in connection with trunk road and side road NMU facilities are as follows:

(iv) Aberdeen City Council

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

4.2.1.7 Maintenance Crossovers

Not used.

4.2.1.8 Turning Areas

The Design shall ensure that:

(i) The turning areas listed in Appendix A of Part 3 shall be designed in accordance with Aberdeen City Council's 'Guidelines and Specifications for Roads within Residential and Industrial Developments (1998)'.

(ii) Notwithstanding any other provision of the Contract, all turning areas shall be designed to accommodate a Phoenix 2-23W (with Elite 2 6x4 chassis) refuse collection vehicle with the following characteristics:

(a) Overall length = 10.595 metres

(b) Overall Width = 2.530 metres

(c) Overall Body Height = 3.205 metres

(d) Minimum body ground clearance 0.410 metres

(e) Lock to lock time = 4 seconds

(f) Kerb to kerb turning radius = 9.250 metres

(iii) Notwithstanding any other provision of the Contract, the turning area at Logie Avenue – West, at Reference Point T04, as identified in Table 1 of Appendix A in Part 3, shall be designed to accommodate a Trident II (12.00m 3-Axle) bus in forward gear with the following characteristics:

(a) Overall length = 11.856m

(b) Overall Width = 2.496 metres

(c) Overall Body Height = 4.140 metres

(d) Minimum body ground clearance = 0.311 metres

(e) Track Width = 2.363 metres

(f) Lock to lock time = 4 seconds

(g) Kerb to kerb turning radius = 9.500 metres

(iv) Notwithstanding any other provision of the Contract, the cul-de-sac to be created at the northern extent of Manor Drive shall be designed to allow a Phoenix 2-23W (with Elite 2 6x4 chassis) refuse collection

vehicle with the following characteristics to undertake a three point turn manoeuvre in conjunction with the bellmouth of the access track serving properties at 438/440 Auchmill Road:

(a) Overall length = 10.595 metres

(b) Overall Width = 2.530 metres

(c) Overall Body Height = 3.205 metres

(d) Minimum body ground clearance 0.410 metres

(e) Lock to lock time = 4 seconds

(f) Kerb to kerb turning radius = 9.250 metres

4.2.1.9 Access Roads and Tracks

The Design shall ensure that:

(i) The maximum gradient permitted for all access tracks shall be 7% unless otherwise noted in Appendix A.

(ii) The minimum gradient for drainage purposes shall be 1%

(iii) Junctions with side roads are designed in accordance with Aberdeen City Council's 'Guidelines and Specifications for Roads within Residential and Industrial Developments (1998)', except where otherwise noted in Appendix A in Part 3.

(iv) Notwithstanding any other provision of the Contract, the access serving 73 Manor Avenue, as identified in Table 4 of Appendix A in Part 3, shall be designed to accommodate a family car with the following characteristics:

(a) Overall length = 4.710 metres

(b) Overall Width = 1.804 metres

(c) Overall Body Height = 1.442 metres

(d) Minimum body ground clearance 0.207 metres

(e) Maximum Track Width = 1.756 metres

(f) Lock to lock time = 4 seconds

(g) Kerb to kerb turning radius = 5.950 metres

The vertical alignment of the access track shall ensure that a minimum of 100mm clearance is provided between the access track and the underside of the vehicle.

Said access track shall be surfaced with high friction surfacing to maximise serviceability under cold weather conditions.

(v) Notwithstanding any other provision of the Contract, the access serving Manor Park Caravan Park, as identified in Table 4 of Appendix A in Part 3, shall be designed to accommodate an 18m long low loader with the following characteristics:

(a) Overall length = 17.918 metres

(b) Overall Width = 2.540 metres

(c) Overall Body Height = 3.408 metres

(d) Minimum body ground clearance 0.332 metres

(e) Maximum Track Width = 2.520 metres

(f) Lock to lock time = 6 seconds

(g) Kerb to kerb turning radius = 6.35 metres

Said access shall be designed to allow said vehicle to enter the access in reverse gear and exit the access in forward gear.

(vi) Notwithstanding any other provision of the Contract, a hardstanding area shall be provided at the southern extent of the access track serving the property at 871 Great Northern Road, as identified in Table 4 of Appendix A in Part 3. The pavement design of hardstanding shall be as per said access track. The hardstanding shall be designed to allow a rigid light goods vehicle with the following characteristics to turn and access the property in reverse gear:

(a) Overall length = 7.170 metres

(b) Overall Width = 2.3 metres

(c) Overall Body Height = 3.580 metres

(d) Minimum body ground clearance 0.375 metres

(e) Maximum Track Width = 2.120 metres

(f) Lock to lock time = 3 seconds

(g) Kerb to kerb turning radius = 7 metres

4.2.1.10 At the entrance to said access track, appropriate road traffic signage shall be provided to discourage unauthorised vehicles. The road traffic signage shall be positioned in such a way that it is clearly visible from the A96. Parking

The design shall ensure that:

(i) The existing ratio of parking spaces to occupied properties is maintained as part of the Works through the provision of both on-street and off-street parking.

(ii) The Contractor shall consult and comply with the requirements of

(a) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

in connection with the positioning of on-street and off-street parking within the Land made Available by the Employer for the Works.

The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure.

4.2.1.11 Traffic Calming

The design shall ensure that:

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

(a) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

in connection with the provision of Traffic Calming within the Land made Available by the Employer for the Works.

The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure.

4.2.2 Site Clearance

4.2.2.1 Contact details in connection with trunk road and side road site clearance are:

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

The Contractor is not required to consult and comply with Transport Scotland, Trunk Road and Bus Operations in relation to site clearance.

4.2.2.2 Not used

4.2.2.3 Felling of Existing Trees

The design shall ensure that felled timber is either recycled in the Works or disposed of off Site.

4.2.3 Fencing and Environmental Barriers

4.2.3.1 Permanent Fencing, Walling, Gates and the Like

The Design shall ensure that:

(i) fencing and gates shall be in accordance with the requirements in Tables 7 and 8, respectively, of Appendix A in Part 3;

(ii) all estate railing fencing shall have a galvanised finish;

(iii) fencing shall be provided at SuDS features to a standard which shall meet the requirements in Table 7 of Appendix A in Part 3 as a minimum. Notwithstanding the requirements set out in Table 7 of Appendix A in Part 3 the Contractor shall be responsible for the design of fencing at SuDS features in accordance with Section 4.2.3.4 of Part 1;

(iv) visual screening shall be provided in order to mitigate glare as identified in the Stage 1 Road Safety Audit;

(v) a 2m high and 36.5m long absorptive noise barrier faced on both sides with woven willow or similar is provided on the inside of the curve between the proposed link road and Logie Avenue between reference points F29 and F34 as noted in Table 7 of Appendix A in Part 3 unless agreed otherwise with the Engineer. The fence should be set back a minimum of 5m from the edge of the new footway;

(vi) a 2m high and 121.5m long absorptive noise barrier faced on both sides with woven willow or similar is provided on the inside of the curve between the proposed link road and Logie Avenue between reference points F30 and F31 as noted in Table 7 of Appendix A in Part 3 unless agreed otherwise with the Engineer. The fence should be set back a minimum of 5m from the edge of the new footway. However, at reference location LB03 where 5m cannot be achieved, the fence shall

be positioned as far as practicable from the footway so as to maximise the width of the grass verge;

(vii) a 2m high and 117m long absorptive noise barrier faced on both sides with woven willow or similar is provided on the inside of the curve between the proposed link road and Logie Avenue between reference points F22 and F23 as noted in Table 7 of Appendix A in Part 3 unless agreed otherwise with the Engineer. The fence should be set back a minimum of 5m from the edge of the new footway. However, at reference location LB02 where 5m cannot be achieved, the fence shall be positioned as far as practicable from the footway so as to maximise the width of the grass verge

(viii) the noise barrier posts shall be galvanised steel, with the exposed outer faces covered with a timber strip such that the steel posts are not visible.

4.2.3.2 Permanent Fencing

(i) Contact Details

(a) Contact details in connection with permanent fencing, gates and the like are:

(ix) Transport Scotland, Major Transport Infrastructure Projects.

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

(ii) Permanent Fencing

(a) Permanent Fencing noted in Clause 4.2.3.4 (iii) of Part 1 is not required for this project.

4.2.4 Road Restraint Systems (Vehicular and Pedestrian)

4.2.4.1 The Contractor shall consult and comply with the requirements of

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

in connection with the location and type of anti-glare screens on trunk roads and side roads.

The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure.

The Contractor is not required to consult and comply with Transport Scotland, Trunk Road and Bus Operations in relation to anti-glare screens.

4.2.4.2 The Contractor shall consult and comply with the requirements of

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

in connection with the design of road restraint systems.

The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure.

The Contractor is not required to consult and comply with Transport Scotland, Trunk Road and Bus Operations in relation to road restraint systems.

4.2.5 Drainage and Service Ducts

4.2.5.1 Contact details in connection with the drainage Design including but not limited to drainage outfalls, culverts and works on all inland watercourses are:

(i) SEPA

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

4.2.5.2 Contact details in connection with joining the proposed drainage to the existing road drainage network are:

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

The Contractor is not required to consult and comply with Transport Scotland, Trunk Road and Bus Operations in relation to road drainage.

4.2.5.3 Contact details in connection with the design of drainage to the side roads are:

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

4.2.5.4 Contact details of those interested parties identified in Section 4.2.5 of Part 1 in relation to discharging water from the Site on either a temporary or permanent basis are:

(i) Scottish Environment Protection Agency (SEPA)

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

(ii) Scottish Water

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

(iii) BEAR Scotland Ltd

Contact person: [REDACTED]

Email: [REDACTED]

Telephone Number: [REDACTED]

4.2.5.5 General Drainage

The Design shall ensure that:

(i) account shall be taken of CIRIA Report C753 "The SuDS Manual" and all surface water runoff from new roads shall pass through two levels of treatment of Sustainable Drainage Systems (SuDS), as defined in CIRIA Report C753, prior to out-falling to the Scatter Burn, unless otherwise consented in writing by SEPA;

(ii) the drainage system shall attenuate discharge rates to the equivalent pre-development runoff rates for the 1 in 200 year return period (0.5% Annual Exceedance Probability (AEP)) rainfall event (plus 20% allowance for climate change) without flooding;

(iii) the maximum discharge rate to Scatter Burn shall be 14 l/s;

(iv) SuDS basins shall attenuate up to the 1 in 200 year return period (0.5% Annual Exceedance Probability (AEP)) rainfall event (plus 20% allowance for climate change) without flooding;

(v) SuDS attenuation features shall be designed as detention basins, as defined in CIRIA Report C753, with an outlet at the base. Basins shall not be designed to accommodate a permanent pool of water;

(vi) all SuDS basins shall have a minimum of 75mm orifice plate to reduce the risk of blockage;

(vii) an impermeable liner shall be placed at the base and side surfaces of all SuDS basins. The liner system shall be designed to withstand uplift pressures exerted by groundwater pressure;

(viii) all SuDS basins shall be designed to ensure the distribution of inflows across the width of the basin to maximise treatment efficiency with check dams and weirs installed at intervals to reduce flow velocity where required (velocity should be below 0.3m/s at the 1 year return period (100% AEP) rainfall event);

(ix) all SuDS basins shall be vegetated and flow depth at the 1 year return period (100% AEP) rainfall event shall be below vegetation height;

(x) all SuDS basins shall have a forebay that occupies a minimum of 10% of the basin area and is separated from the main basin area by a permeable berm to allow for trapping of sediment within a more manageable area and reducing the risk of remobilisation of sediment that is settled in the remainder of the basin;

(xi) a one way flap valve shall be installed at all outfalls to ensure that the flow does not "back-up" into the pipe or drainage system;

(xii) advanced hydrodynamic vortex separators shall contain components to enhance pollutant removal and shall be designed and maintained in accordance with manufacturers guidance;

(xiii) carrier drains and filter drains shall accommodate a one-year storm, including a 20% increase in rainfall intensity to allow for climate change, in-bore without surcharge;

(xiv) carrier drain and filter drain design shall be checked against a five-year storm intensity, including a 20% increase in rainfall intensity to allow for climate change, to ensure that the chamber surcharge levels do not exceed formation level or sub-formation level where a capping layer shall be present;

(xv) attenuation features and drainage systems shall be designed to include a 20% increase in rainfall intensity in order to account for climate change;

(xvi) pre-development runoff shall be assessed as the surface water runoff regime from the site before development;

(xvii) pipes within filter drains placed in embankments with diameters greater than 500mm may only be permitted where appropriate and subject to the approval of the Engineer;

(xviii) filter drains shall not be used to treat road runoff, however they may be used to provide pre-earthworks drainage;

(xix) where gullies outfall to filter drains, gully tails shall connect directly to the conveyance pipe;

(xx) gully spacing requirements should comply with DMRB standards rather than ACC specification;

(xxi) a linear drainage channel with grate shall be provided at the low point of the access track serving 73 Manor Avenue;

(xxii) a linear drainage channel with grate shall be provided at the low point of the access track serving the properties at 438/440 Auchmill Road;

(xxiii) sufficient gullies shall be provided at the turning areas identified in Table 1 of Appendix A in Part 3 to ensure that they shall be kept free from standing water;

(xxiv) Pre-earthworks ditches shall not be permitted; and

(xxv) all surface water runoff from surfaced access tracks shall pass through a minimum of one level of treatment of Sustainable Drainage Systems (SuDS) prior to out-falling into any watercourse, unless otherwise agreed with SEPA.

4.2.5.6 Existing Drainage

Refer to Part 1 – General Requirements.

4.2.5.7 Drainage Outfalls

Refer to Part 1 – General Requirements.

4.2.5.8 Culverts

Refer to Part 1 – General Requirements.

4.2.5.9 Contact details in connection with the Design for watercourse diversions are:

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

(ii) SEPA

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

4.2.5.10 Pollution Control and Flood Prevention

Contact details in connection with flood prevention and pollution control measures are:

(i) SEPA

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

(ii) Aberdeen City Council,

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone:	[REDACTED]

4.2.5.11 Contact details in connection with measures to prevent unauthorised use of maintenance access routes are:

(i) Aberdeen City Council

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

The Contractor is not required to consult and comply with Transport Scotland, Trunk Road and Bus Operations in relation measures to prevent unauthorised use of maintenance access routes.

4.2.5.12 Particular Requirements for Underpasses

Not used.

4.2.5.13 Ducts

Refer to Part 1 – General Requirements.

4.2.6 Earthworks and Rock Cuttings

4.2.6.1 General

Refer to Part 1 – General Requirements.

4.2.6.2 Ground Investigation Report

Refer to Part 1 – General Requirements

4.2.6.3 Geotechnical Design Report

Refer to Part 1 – General Requirements

4.2.6.4 Geotechnical Feedback Report

Refer to Part 1 – General Requirements

4.2.6.5 Cuttings

Refer to Part 1 – General Requirements

4.2.6.6 Rock Cuttings

Refer to Part 1 – General Requirements

4.2.6.7 Existing Natural and Constructed Slopes (including Rock Cuttings)

Refer to Part 1 – General Requirements

4.2.6.8 Temporary Works Adjacent to Sections of Live Carriageway

Refer to Part 1 – General Requirements

4.2.6.9 Embankments

Refer to Part 1 – General Requirements

4.2.6.10 Topsoil

(i) 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 or areas where a concrete liner for a SuDS detention basin or otherwise is proposed.

4.2.7 Road Pavements

4.2.7.1 Contact details in connection with the pavement Design for all side roads and all carriageway tie-ins to side roads are:

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

4.2.7.2 The road pavement Design for roads as described in Appendix A in Part 3 shall be as identified in Table 4.2.7.2. The road pavement Design for all roads described in Table 4.2.7.2 shall be designed for the design life shown in accordance with the DMRB.

Table 4.2.7.2

Road Name	Reference Points	Pavement Design / millions of standard axles (msa)	Design Life	Analytical Approach Design Method (HD26) Permitted
A90 Northbound	R01 to R03	31.6	40 See Note 1	No
A90 Northbound	R03 to R04	31.6	40	No
A90 Northbound	R04 to R05	31.6	40 See Note 1	No
A90 Southbound	R06 to R04	31.6	40 See Note 1	No
A90 Southbound	R04 to R03	31.6	40	No
A90 Southbound	R03 to R02	31.6	40 See Note 1	No
A96 Eastbound	R07 to R09	41.2	40 See Note 1	No
A96 Eastbound	R09 to R10	41.2	40	No
A96 Eastbound	R10 to R11	41.2	40 See Note 1	No
A96 Westbound	R12 to R10	41.2	40 See Note 1	No
A96 Westbound	R10 to R09	41.2	40	No

A96 Westbound	R09 to R08	41.2	40 See Note 1	No
Dual Carriageway Link Road Westbound	L01 to L02	26.1	40	No
Dual Carriageway Link Road Eastbound	L02 to L01	26.1	40	No
Manor Avenue	L03 to L04	0.5	40	No
Manor Avenue Service Road	L05 to L06	0.5	40	No
Access to Manor Avenue	L07 to L08	0.5	40	No
Realigned Manor Avenue	L09 to L10	11	40	No
Logie Avenue - West	L11 to L12	1.3	40	No
Logie Avenue - West	N/A	N/A	N/A	N/A
Logie Avenue - East	L15 to L16	1.3	40	No
Logie Terrace	L17 to L18	0.5	40 See Note 1	No
Manor Avenue – Turning Area	T01	0.5	40	No
Logie Terrace – Turning Area	T02	0.5	40	No
Logie Avenue – East – Turning Area	T03	1.3	40	No
Logie Avenue – West _ Turning Area	T04	1.3	40	No

Notes

1. Design life applies to areas of new road construction within specified length of road. Where existing road is retained within these lengths the Contractor shall remove and replace the existing surface course material with bond coat and new surface course which complies with the requirements of Volume 3 Employer's Requirements Part 2 – Scheme Specific Requirements Clause 4.2.7.4.

4.2.7.3 Not used.

4.2.7.4 The Design shall ensure that:

(i) Surface course shall be hot rolled asphalt to Clause 911 of the Specification with pre-coated chippings to Clause 915 of the Specification.

(ii) The use of thin surface course systems shall not be permitted in the works.

(iii) The existing surface course(s) shall be removed prior to the placement of the new bituminous material.

(iv) Paragraph 7.25 of HD30 of the DMRB shall be deleted and replaced with the following:

"If Heavy Duty Macadam (HDM) or Dense Bitumen Macadam with 50 grade penetration grade binder (DBM50) or High Modulus Base Material with 35 penetration binder (HMB35) shall be used in the Design, then some reduction in overlay thickness shall be possible. This shall be calculated by applying a percentage 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. The maximum percentage reductions in thickness permitted shall be as follows:

For DBM 50 base and binder course 5 percent reduction

For HDM base and binder course 10 percent reduction

For HMB35 base and binder course 15 percent reduction"

(v) Where HMB35 material shall be use as a base course in the pavement design then the corresponding binder course forming part of such design shall be HMB35 material.

(vi) Notwithstanding the requirements of HD26 of the DMRB the use of HMB35 material in the Design does not require a departure from standards to be granted by the Overseeing Organisation.

(vii) The design of all turning areas and parking areas shall be in accordance with Aberdeen City Council's Road Specifications and Guidelines.

(viii) Widening of existing carriageways shall be designed in accordance with guidelines in DMRB HD26.

(ix) Where the pavement 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. The requirements 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.

(x) All areas of pavement affected by kerbing amendment works shall be made good.

4.2.7.5 Road pavement for Accesses, Access Roads / Tracks and Accommodation Works tracks as detailed in Employer's Requirements Part 3 Appendix A, Table 4.

The Design shall ensure that:

(i) Surfaced access construction shall comprise of either:

300 millimetres thick type 1 sub-base to Clause 803 of the Specification, 100 millimetres thick Dense Bitumen Macadam to Clause 903 of the Specification and 50 millimetres thick hot rolled asphalt to Clause 911 of the Specification with chippings to Clause 915 of the Specification and capping in accordance with Clause 613 of the Specification where required; or

300 millimetres thick type 1 sub-base to Clause 803 of the Specification, 100 millimetres thick Dense Bitumen Macadam to

Clause 903 of the Specification and 50 millimetres thick Close Graded Bitumen Macadam to Clause 912 of the Specification and capping in accordance with Clause 613 of the Specification where required.

4.2.7.6 Where carriageway widening is undertaken, new foundation pavement materials adjoining existing retained pavement shall be constructed of material of equal Foundation Class such that the risk of longitudinal cracking is minimised.

4.2.7.7 Where carriageway widening is undertaken, a 150 millimetres by 300 millimetres step into the foundation layer shall be provided in accordance with HD 27.

4.2.8 Kerbs, Footways and Paved Areas

4.2.8.1 Contact details in connection with the Design for all kerbing on the trunk roads and side roads are:

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

Contact details in connection with the Design for all footways, footpaths, combined footways/cycle tracks and NMU routes associated with the trunk roads and side roads are:

(ii) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

4.2.8.2 The Design shall ensure that:

(i) The shared footways/cycleways included in Table 3 of Appendix A of Part 3 shall be in accordance with the requirements of both Cycling by Design, 2010 and Transport Scotland's Roads for All: Good Practice Guide for Roads, July 2013;

(ii) The footways and footpaths included in Table 3 of Appendix A of Part 3 shall be in accordance with the requirements of Transport Scotland's Roads for All: Good Practice Guide for Roads, July 2013. Notwithstanding the requirements of Transport Scotland's Roads for All: Good Practice Guide for Roads, July 2013, all tactile paving slabs shall measure 400mm x 400mm x 65mm to BS 7533-4:2006. Buff coloured blister paving shall be used at uncontrolled crossings;

(iii) Unless otherwise required by Section 4.2.8.3 of Part 1, pavement for NMU routes shall be bound flexible surfacing in accordance with the requirements of Cycling by Design, 2010, Table 10.1;

(iv) Separation strips provided on NMU routes shall be constructed in red block paving. The pavement construction of block paving separation strips shall be in accordance with the requirements of Cycling by Design, 2010, Table 10.1, with the exception that block paving shall be 80mm deep underlain by a 30mm bedding layer of sharp sand;

(v) Curve widening at corners shall be applied on the inside radius of NMU routes in the vicinity of junctions in order to deter users from

cutting through adjacent landscape areas. The inside radius of NMU routes in the vicinity of junctions shall be a minimum of 12.5m unless otherwise agreed with the Engineer;

(vi) Bus stops and associated street furniture shall be provided at the bus lay-bys identified in Table 5 of Appendix A in Part 3 in accordance with the requirements of Transport Scotland's Roads for All: Good Practice Guide for Roads, July 2013;

(vii) In-line bus stops shall be provided in accordance with the requirements of Transport Scotland's Roads for All: Good Practice Guide for Roads, July 2013 at the following locations:

(a) Eastbound verge of Realigned Manor Avenue; and

(b) In the vicinity of the bus turning area on Logie Avenue – West.

(viii) Bus shelters shall be provided at bus lay-bys. Bus shelters shall have a glazed roof, an aluminium frame, mid rails, full size information panel with backing plate and 3mm thick RTI tablet bracket with boxout enclosure including cabling to ground level. Bus shelters shall be powder coated dark green to colour reference RAL 6005 with a single bar perch seat which shall be powder coated yellow. Bus shelters shall include three bays and shall measure 3.2 metres long x 1.3 metres wide;

(ix) Refuse collection hardstandings shall be provided at the following locations:

(a) One hardstanding area at eastern extent of Manor Avenue

(b) Two hardstanding areas on Manor Avenue Service Road

(c) One hardstanding areas on Logie Avenue - East

(d) One hardstanding areas on Logie Avenue - West; and

(x) A seating area shall be provided in accordance with Transport Scotland's 'Roads for All: Good Practice Guide for Roads, July 2013' within open space exchange land adjacent to the northbound footway of the A90 North Anderson Drive.

(xi) Surfacing at central reserves shall be constructed using granite sett paving in accordance with the specifications set out in Aberdeen City Council's 'Guidelines and Specifications for Roads within Residential and Industrial Developments (1998)'. Notwithstanding the requirements of Aberdeen City Council's 'Guidelines and Specifications for Roads within Residential and Industrial Developments (1998)' granite setts shall be in accordance with BS7533-10, Table 2, Size 4, 150mm wide max x 300mm long x 150mm deep "Aberdeen" setts (to match existing) (to BS 7533-10) laid to stretcher bond with 10-15mm joints between units filled with 40n/mm2 mortar to BS 7533-7: Table C.5. Granite setts shall be underlain by:

(a) 80mm fine concrete laying course;

(b) 200mm thick dense bitumen macadam 50 base course: and

(c) 150mm thick type 1 sub-base to clause 803 of the Specification.

4.2.8.3 The Contractor shall consult and comply with the requirements of

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

in connection with the positioning of the in-line bus stops and all associated street furniture identified in 4.2.8.2 (vi) and (vii).

The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure.

4.2.8.4 The Contractor shall consult and comply with the requirements of

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

in connection with the positioning of the refuse collection hardstandings and the positioning and specification of all associated kerbs, paved areas and street furniture identified in 4.2.8.2 (vii),(ix) and (x).

The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure.

4.2.9 Traffic Signs, Road Markings and Studs

4.2.9.1 Contact details in connection with all details for the provision of traffic signs, traffic signals, road markings and studs for trunk roads and side roads are:

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

4.2.9.2 Contact details in connection with maintaining existing sign information during construction of the Works are:

(i) Transport Scotland, Trunk Roads and Bus Operations

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

(ii) BEAR Scotland Ltd

Contact person: [REDACTED]

Email: [REDACTED]

Telephone Number: [REDACTED]

(iii) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone: [REDACTED]

4.2.9.3 The Contractor shall consult and comply with the requirements of

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

in connection with tourist information signs and all details for the provision of traffic signs, traffic signals, road markings, and studs for the trunk roads and side roads detailed in Appendix A of Part 3.

The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure.

4.2.9.4 The Contractor shall install aluminium road studs at all signalised crossings.

4.2.9.5 Traffic Signals

(i) General

(a) Traffic signals shall be provided at the following locations:

(i) Dual Carriageway Link Road / A96 Auchmill Road Junction: All arms of the junction between the Dual Carriageway Link Road and the A96 Auchmill Road.

(ii) Dual Carriageway Link Road / Realigned Manor Avenue / Logie Avenue Junction: All arms of the junction between the Dual Carriageway Link Road, the Re-aligned Manor Avenue and Logie Avenue.

(iii) Dual Carriageway Link Road / A90 North Anderson Drive Junction: All arms of the junction between the Dual Carriageway Link Road and the A90 North Anderson Drive.

(b) The Contractor shall consult and comply with the requirements of Aberdeen City Council with regards to the layout, configuration, installation and testing of:

(i) Traffic signals;

(ii) Pedestrian crossings; and

(iii) Combined pedestrian / cycle crossings

within the Land Made Available for the Scheme by the Employer for the Works.

The design requirements for traffic signals are provided in Appendix 12/5 to the Specification.

Contact Details in connection with traffic signals are:

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

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

(c) The Contractor shall consult with the parties listed in Section 4.2.9 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.

(d) The Contractor 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 Contractor shall be Urban Traffic Management and Control ("UTMC") compatible.

(e) The Contractor shall be responsible for the provision of the power supply associated with the traffic signal equipment.

(f) 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:

(i) Detailed drawings at 1:200 and at 1:500 scales for each traffic signal controlled junction;

(ii) Traffic Open Products and Specifications (TOPAS) 2500A Configuration Forms; and

(iii) Split Cycle Offset Optimisation Technique (SCOOT) Datasets (as applicable).

(g) The design shall provide pedestrian crossings and facilities for cyclists at traffic signal installations. Controlled crossing for pedestrians and cyclists shall be designed in accordance with both Transport Scotland's Roads for All: Good Practice Guide for Roads, July 2013 and Cycling by Design, 2010.)

(h) Nearside Puffin and Toucan crossings shall be used.

(i) The design of traffic signal installations shall ensure integrated operation with the existing UTC, Remote Monitoring system(s) operated by the Scottish Ministers and Aberdeen City Council, where applicable, 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 / SCOOT 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 Contractor shall consult and comply with requirements of:

(i) Transport Scotland

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

(ii) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

in connection with the operation of traffic signals.

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

(j) The Contractor shall prepare fixed time plans, SCOOT plans, OMU Configurations (if applicable) and TOPAS 2500A forms to

the satisfaction of the Engineer. The Contractor shall configure accordingly within the UTC / SCOOT database or Remote Monitoring System ("RMS").

(k) The Contractor shall undertake on-street validation and fine-tuning of the signals / systems to the satisfaction of the Engineer. The Contractor shall provide appropriate certification, to the satisfaction of the Engineer, recording the validation measurements and parameters used in the initial system configuration.

(l) The Contractor shall be responsible for setting up all UTC / SCOOT system databases and their configuration to the satisfaction of the Engineer. This shall include but not be limited to Outstation Transmission Unit ("OTU") data, controller data, SCOOT network data, SCOOT link data, plan data and timetable data. All data shall be submitted to the Engineer for approval prior to being configured in the respective systems. The Contractor shall provide Configuration Forms to the Engineer at least 9 months prior to the Contractor's proposed installation date to allow adequate time for the Engineer to review the UTC system information accordingly.

(ii) Below Ground Traffic Signal Equipment

(a) The Contractor shall supply and install proprietary traffic signal pole retention sockets. The Contractor's proposed pole retention system shall be subject to the approval of the Engineer.

(b) The Contractor 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 Contractor 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.

(iii) Power Supply and Termination

(a) The Contractor shall be responsible for the design, supply and installation of all the equipment cabinets required for the traffic signal equipment, including any related UTC and their associated power supplies. The Contractor shall also arrange for the provision of an independent power supply to the electrical termination pillars to all traffic signal equipment with the Electricity Supply Contractor.

(b) 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.

(iv) Communications Supply

(a) The Contractor shall design, supply and install the communications system and associated cabinetry for the traffic signal equipment and UTC equipment. The Contractor shall consult and comply with Transport Scotland and Aberdeen City Council with regard to the proposed communications solution and compatibility with the existing systems' telecommunications.

(b) The Contractor shall design, supply and install the ducting for the proposed communication network, as detailed in section 4.2.9.7 and Appendix 5/2 of the Specification.

(c) The Contractor shall liaise with the relevant Service Providers as necessary with regards to the provision of communications.

(d) Communications cabinets shall be provided and be located adjacent to the traffic signal controller cabinet at the heel of the footway where possible.

(v) Traffic Signal / Communication Ducts

(a) 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 Engineer. 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. The Contractor shall design, supply and install the traffic signal duct network. Traffic signal ducting shall be provided in accordance with Appendix 5/2 of the Specification.

(b) All traffic signal ducts shall be orange in colour, and all communications ducts shall be green in colour.

(c) 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.

(d) Where electrical mains cable is to be installed, it shall be installed in separate ducting and not share traffic signal chambers. However, the same trench may be used for both electrical mains ducts and traffic signals / communications ducts, if required.

(e) All completed duct routes shall be tested by drawing through an appropriate mandrel. The Contractor 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.

(vi) Ducts Access Chambers

(a) The Contractor 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 5/2 of the Specification. 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 be a minimum of 600 millimetres by 600 millimetres due to the depth of the road

crossing). The Contractor shall consult and comply with the requirements of Aberdeen City Council in relation to the design of duct access chambers.

(b) The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure.

(c) Access chambers shall be manufactured from polypropylene, be twin-walled and shall be assembled from stackable 150mm deep sections. Access sections should have pre-drilled duct entries and be supplied with removable caps. Access chambers must have the ability to allow internal cable management furniture to be retrofitted without the need for any excavation.

(d) The Contractor shall ensure provision of duct access chambers for the relevant communication Service Provider's communication ducts. The Contractor shall liaise with the relevant communication Service Provider to arrange the installation of such chambers.

(e) The design of the Works shall include access chambers at the following general locations:

(i) at every change in the horizontal and vertical direction of the ducts;

(ii) at every junction of ducts;

(iii) at every traffic signal controller;

(iv) at the end of each duct run; and

(v) at each end of each road crossing.

(f) The chamber spacing shall be no greater than 40 metres in any direction.

(g) 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.

(h) 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.

Where the design requires new ducted cables within the existing footways, the Contractor shall where possible use existing duct chambers. The Contractor 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.

(vii) Ancillary Equipment

(a) The Contractor 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.

(i) 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.

(ii) 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.

(b) The Contractor shall be responsible for all traffic management associated with the traffic signal works specified in this Section 4.2.9.

(viii) Urban Traffic Control Equipment

(a) The Contractor 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.

(b) The Contractor 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 Contractor shall provide certification, to the satisfaction of the Engineer, 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.

(c) 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.

(d) Adaptive control systems shall be used to maximise the efficiency of the traffic signal operation.

(e) The Contractor 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.

(ix) Traffic Signal Posts

(a) Traffic signal posts shall be supplied complete with pole caps and all necessary mounting brackets and accessories.

(b) The Contractor shall consult and comply with the requirements of

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

in connection with the traffic signal post numbering system.

The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure.

4.2.10 Road Lighting

4.2.10.1 Contact details in connection with all details for the provision of road lighting for the trunk roads and side roads are:

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

4.2.10.2 Contact details in connection with maintaining existing road lighting during construction of the Works are:

(i) Transport Scotland, Trunk Roads and Bus Operations

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

(ii) BEAR Scotland Ltd

Contact person: [REDACTED]

Email: [REDACTED]

Telephone Number: [REDACTED]

(iii) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

4.2.10.3 The Contractor shall consult and comply with the requirements of

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

in connection with all details for the provision of road lighting for the trunk roads and side roads stated in Appendix A of Part 3.

The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure.

4.2.10.4 The Contractor shall consult and comply with the requirements of

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

in connection with all aspects of lighting design.

The Contractor shall provide Consultation Certificates in accordance with the Certification Procedure.

4.2.10.5 New road lighting shall be provided as follows:

(i) to lighting levels in accordance with BS5489-1:2013 and BS EN 13201-2 as detailed in Table 4.2.10.5;

Table 4.2.10.5: New Road Lighting

Road Description	Reference Points as shown on drawing B1557630/CD/REF/001	Lighting classes to BS 5489-1 & BS EN 13201-2
A90 Northbound	R01 to R06	C3
A90 Southbound	R06 to R01	C3
A96 Eastbound	R07 to R12	C3
A96 Westbound	R12 to R07	C3
Dual Carriageway Link Road Westbound	L01 to L02	M3/C3
Dual Carriageway Link Road Eastbound	L02 to L01	M3/C3
Manor Avenue	L03 to L04	P3
Manor Avenue Service Road	L05 to L06	P4
Access to Manor Avenue	L07 to L08	P3
Re-aligned Manor Avenue	L09 to L10	M3/C3
Logie Avenue - West	L11 to L12	P3
Logie Avenue - West	N/A	N/A
Logie Avenue - East	L15 to L16	P3
Manor Avenue – Turning Area	T01	P3
Logie Terrace – Turning Area	T02	P3
Logie Avenue – East – Turning Area	T03	P3
Logie Avenue – West _ Turning Area	T04	P3
Manor Drive	-	P3
NMU Routes	N34 - N35 & N38 - N37	P4
Access road	A01 – A02	P4

(ii) The Contractor shall interface the new lighting installation with the existing lighting and shall consult and comply with the requirements of

(a) Aberdeen City Council

Contact person: [REDACTED]

Telephone number: [REDACTED]

Email: [REDACTED]

as required to establish the level of provision of new lighting columns within the Land made Available by the Employer for the Works.

The Contractor shall provide Consultation Certificates in accordance with the Certification Procedure.

(iii) The Contractor 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.

(iv) The Contractor shall liaise with the Electricity Supply Company regarding the provision of power supplies, the upgrading of existing power supplies and requirements for their provision.

The Contractor shall consult and comply with the requirements of

(a) Aberdeen City Council

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

in connection with their specific requirements, including provision of permanent power supplies and their locations.

The Contractor shall provide Consultation Certificates in accordance with the Certification Procedure.

(v) 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.

(vi) The design specific requirements for road lighting are provided in Appendix 13/1, 14/1, 14/2 and 14/4 of the Specification.

4.2.10.6 Luminaires

(i) Light source to be Lighting Emitting Diode (LED) for all luminaires including illuminated signs, lighting columns and bollard.

(ii) All luminaires shall be group controlled by a Photo-Electric Control Units (PECU) located on the column adjacent to the feeder pillar.

(iii) Prior to delivery of any luminaire using electronic LED driver, the Contractor shall provide the Engineer 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.

The luminaires shall be compatible with all associated equipment, control gear, switching equipment and columns and brackets offered in Appendix 13/2. Information shall include the LED and array type, wattage and luminaire circuit wattage, driver current and optic setting.

(iv) 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.

(v) Luminaires shall conform to the requirements of the appropriate sections of ROHS and WEEE Regulations.

(vi) Performance submissions in the form of a lighting report as per Lighting Reality Roadway shall be provided for each LED lantern type.

4.2.10.7 Feeder Pillars

(i) Dedicated separate feeder pillars shall be provided for the lighting of roads operated and maintained by Aberdeen City Council. The feeder pillars and circuits for lighting installations shall be located within the Land Made Available by the Employer for the Works.

(ii) The Contractor ensures that individual lighting units, illuminated signs and other electrical assets excluding feeder pillars are electrically supplied via private underground cable networks and that Distribution Network Operator (DNO) direct supplies are limited to feeder pillars.

(iii) The Contractor shall arrange for all DNO electrical supply connection works to be undertaken. Where the Contractor 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.

(iv) 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.

(v) Single phase supplies shall be utilised. No three phase supply will be permitted. 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.

(vi) 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.

(vii) 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 Engineer within seven working days of the tests being undertaken.

4.2.10.8 Wiring

(i) All new road lighting installations shall be wired in XLPE or MDPE / PVC / SWA / PVC cables.

4.2.10.9 Earthing

(i) The Contractor shall earth the whole installation in compliance with BS7671 (The IET Wiring Regulations), BS 7430 (Code of practice for protective earthing of electrical installations).

(ii) 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.

4.2.10.10 Underground Ducting and Cabling

(i) The Contractor shall install all cables associated with the lighting infrastructure in a fully ducted system.

4.2.10.11 Illuminated Signs and Bollards

(i) The lighting design of the Works shall include for the energising and illumination of relevant illuminated signs and bollards.

4.2.10.12 Cut-outs

(i) All road lighting and sign column cut-outs shall comply with BS7654. The cut-out manufacturer shall be accredited to ISO 9002 by an accredited certification body.

(ii) Non-lit retroreflective reboundable bollards may be used where deemed applicable.

4.2.10.13 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 Contractor 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 Contractor shall repair damaged cables by replacing the full length of the damaged cable.

4.2.10.14 Labelling

(i) The Contractor shall consult and comply with Aberdeen City Council

(a) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

in connection with labelling requirements.

The Contractor shall provide Consultation Certificates in accordance with the Certification Procedure;

4.2.10.15 Temporary Lighting

(i) 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 updates. It shall not form a hazard to users.

(ii) No existing road lighting shall be disconnected until it has been replaced by either the new permanent lighting arrangement or a temporary lighting system. The temporary lighting shall remain operational until the new permanent lighting arrangement is brought into use.

The Contractor shall consult and comply with the requirements of

(a) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

in connection with the design of temporary lighting systems.

The Contractor shall provide Consultation Certificates in accordance with the Certification Procedure.

(iii) Temporary lighting arrangements shall require the approval of the Engineer prior to the commencement of the Works in the affected area.

4.2.10.16 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;

(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;

(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.

4.2.10.17 Site Records (Lighting)

(i) As-built drawings shall be produced by the Contractor, and shall be in accordance with the requirements of Clause 1402 Volume 2: Specifications for Highways Works 'Electrical Work for Road Lighting and Traffic Signs'.

Where necessary, large scale inserts shall be produced by the Contractor where layouts are complex.

(ii) The Contractor shall prior to placement of any orders for materials, submit to the Engineer for approval, triplicate copies of completed Appendix 13/2 Data sheets for each type lighting column.

(iii) The Contractor shall also supply completed test certificates cross-referenced to the apparatus identified on the as-installed drawings.

(iv) The Contractor shall supply Operations and Maintenance manuals to support the site records.

4.3 Structures General Requirements

4.3.1 General

4.3.1.1 Contact details with regard to the Design, construction, completion and maintenance of all Structures affecting Aberdeen City Council road network are:

(i) Aberdeen City Council

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number	[REDACTED]

4.3.1.2 Contact details with regard to the Design, construction, completion and maintenance of all Structures adjacent to watercourses are:

(i) SEPA

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

4.3.1.3 Contact details for Statutory Undertakers in connection with the design for the layout and location of apparatus, over, through and adjacent to Structures and the method of access to such apparatus are;

(i) BT Openreach

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

(ii) Scottish Water

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

(iii) Scottish and Southern Energy

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

(iv) Scotland Gas Networks

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

(v) Vodafone

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

(vi) Trafficmaster

Contact person:	[REDACTED]

	Email:	[REDACTED]
	Telephone number:	[REDACTED]
(vii)	City Fibre	
	Contact person:	[REDACTED]
	Email:	[REDACTED]
	Telephone number:	[REDACTED]

and any other Relevant Statutory Undertaker.

4.3.2 Location and Description of Structures

4.3.2.1 Refer to Part 1 – General Requirements

4.3.3 Design Loading

4.3.3.1 Refer to Part 1 – General Requirements

4.3.4 Design Headroom

4.3.4.1 Refer to Part 1 – General Requirements

4.3.5 Road Cross Section at Structures

4.3.5.1 Refer to Part 1 – General Requirements

4.3.6 Parapets and Wind Barriers

4.3.6.1 Refer to Part 1 – General Requirements

4.3.7 Structural Form

4.3.7.1 Refer to Part 1 – General Requirements

4.3.8 Structural Finish

4.3.8.1 Retaining Wall S01

(i) Notwithstanding the requirements of Section 4.3.8.6 of Part 1 – General Requirements, a plain concrete border 200 millimetres wide shall be provided to the patterned profile finish.

4.3.8.2 Retaining Wall S02

(i) Notwithstanding the requirements of Section 4.3.8.4 of Part 1 – General Requirements, the finish to the exposed surfaces of Retaining Wall S02 shall match that of the adjacent retaining wall which it ties into.

4.3.9 Service Ducts

4.3.9.1 Refer to Part 1 – General Requirements

4.3.10 Structural Drainage

4.3.10.1 Refer to Part 1 – General Requirements

4.3.11 Verges, Side Slopes and Paved Areas

4.3.11.1 Refer to Part 1 – General Requirements

4.3.12 Durability

4.3.12.1 Steelwork

Structural steelwork shall be protected using a paint system appropriate to an inland environment 'Difficult' access.

Contact details in connection with the approvals for the Contractor's proposed paint systems are:

(i) Transport Scotland (Bridges Branch)

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

4.3.13 Maintenance and Inspection

4.3.13.1 Refer to Part 1 – General Requirements

4.3.14 Reinforced Soil

4.3.14.1 Contact details in connection with precast concrete facing panels associated with reinforced soil structures in the Works are:

(i) Aberdeen City Council

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number	[REDACTED]

4.3.15 Corrugated Steel Buried Structures

4.3.15.1 Refer to Part 1 – General Requirements

4.3.16 Existing Structures

4.3.16.1 Refer to Part 1 – General Requirements

4.3.17 Removal and Replacement of Existing Waterproofing

4.3.17.1 Refer to Part 1 – General Requirements

4.3.18 Construction Tolerances in Structural Concrete

4.3.18.1 Refer to Part 1 – General Requirements

4.3.19 Road Lighting

4.3.19.1 Refer to Part 1 – General Requirements

4.3.20 Structures Design Statement

4.3.20.1 Refer to Part 1 – General Requirements

4.3.21 Resin Anchors

4.3.21.1 Refer to Part 1 – General Requirements

4.3.22 Particular Requirements for Structures

4.3.22.1 Retaining Walls - General

(i) Proposed retaining walls are outlined in Appendix B of Part 3.

4.3.22.2 Scatterburn Culvert

(i) The design of any modification Works to the existing Scatter Burn Culvert, including connection of new drainage outlets and installation of new access chambers, shall ensure that the loads applied to the Structure before, during and following completion of the Works shall not cause any overstress in or unacceptable deformation to the existing structure.

(ii) The Contractor shall take due cognisance of the water flow in the existing culvert when planning the Works and shall take all necessary Health and Safety precautions when undertaking the Works and to ensure the adequacy of the completed Works.

(iii) A detailed method statement of the proposed Works shall be submitted to the Employer's Representative no less than 1 week prior to commencement of the Works. The method statement shall, inter alia, describe how, following commencement of the Works, increased flow conditions shall be dealt with during periods of high rainfall and flow through the culvert and the proposed measures to protect the existing structure from the effects of such increased flows.

4.4 Environmental Criteria

4.4.1 General Requirements

4.4.1.1 Refer to Part 1 – General Requirements

4.4.2 Indicative Landscape and Planting Works Drawings

4.4.2.1 Scheme specific requirements for the landscape Design and environmental mitigation Works are outlined on the Indicative Landscape and Planting Works Drawings, as listed in Appendix 0/4 of the Specification.

4.4.3 Qualified Professional Assistance

4.4.3.1 Contact details in connection with approvals for the appointment of the Landscape Architect and the Landscape Clerk of Works are:

(i) Transport Scotland

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

4.4.3.2 Contact details in connection with approvals for the appointment of the archaeologist are:

(i) Transport Scotland's Historic Environment Advisor

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

4.4.3.3 Contact details in connection with approvals for the appointment of the Ecological Clerk of Works are:

(i) Scottish Natural Heritage

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

4.4.4 Environmental Design and Mitigation

General

4.4.4.1 Refer to Part 1 – General Requirements

Design Standards

4.4.4.2 Refer to Part 1 – General Requirements

Fitting Landscapes: Securing more Sustainable Landscapes

4.4.4.3 Refer to Part 1 – General Requirements

Landscape Design integrated with Structural Design and Environmental Barriers

4.4.4.4 Refer to Part 1 – General Requirements

Landscape Design for Temporary Works Areas

4.4.4.5 Refer to Part 1 – General Requirements

Air Quality and Dust

4.4.4.6 Contact details in connection with air quality and the reduction of dust nuisance are:

(i) Aberdeen City Council

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone:	[REDACTED]

Re-Use of Materials and Waste Management

4.4.4.7 Contact details in connection with Site Waste Management and the disposal of waste materials that cannot be recycled are:

(i) SEPA

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

4.4.4.8 The Contractor shall prepare a Waste Management Plan in accordance with Section 1.9.6 of Part 1, which should include details of how the minimisation of waste on site will be achieved and demonstrate adherence to Scotland's Zero Waste Plan.

Water Quality and Drainage

4.4.4.9 Contact details in connection with water quality and drainage and the use of approved herbicides on embankments, cuttings and verges in proximity to watercourses are:

(i) SEPA

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

(ii) Aberdeen City Council

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure (or other written evidence that appropriate consultation has taken place.

4.4.4.10 Contact details in connection with monitoring water quality during construction, completion and maintenance of the Works are:

(i) SEPA

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

4.4.4.11 SuDS detention basins or otherwise, required as part of the road drainage system, 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 earthworks with smooth flowing contours to integrate seamlessly with the surrounding landform;

(iii) avoid abrupt changes in slope, sharp angles and steep side slopes;

(iv) have perimeter access tracks that are at existing grade or in cutting, where possible, to avoid a bunded appearance;

(v) include grading out of the outer slopes to varied slope angles to tie in with the surrounding landform where access tracks and paths are required to be on embankment;

(vi) be designed with gradients of the inner slopes varied along their length to reflect the naturally occurring topography of the immediate surroundings, varying the distance of the access track / path from the SuDS detention basin or otherwise to accommodate this;

(vii) have bank slopes no steeper than 1:3 at any point and shallower where possible with varied microtopography and avoiding straight batters;

(viii) include the localised compression and loosening of the soil to allow a variety of different plant communities to establish;

(ix) have a presumption against the provision of fencing – if fencing is deemed appropriate following a suitable risk assessment in accordance with Section 4.2.3.4 of Part 1 it shall be as unobtrusive as possible, with the fence type and alignment designed to minimise visual impact;

(x) have planting to help screen hard elements including any fencing, outlet and inlet structures, enhance wildlife habitat and provide visual interest;

(xi) have adjacent open ground around the SuDS detention basins or otherwise seeded with semi-natural vegetation/wildflowers to provide added wildlife habitat and visual interest;

(xii) include planting of native marginal aquatic species in flatter areas in the base of SuDS detention basins;

(xiii) include sowing of temporarily wet areas of the sloping banks within detention basins or otherwise sown with species rich / wet grassland; and

(xiv) include an informal, unbound section of track to permit occasional vehicular and pedestrian access to any inlet and outlet structures – it should not surround the entire SuDS detention basin. A section of track for pedestrian access shall be provided around the remainder of the SuDS detention basin. The track shall be designed to be as unobtrusive as possible and reflect the rural nature of the site.

Planning and Land Use

4.4.4.12 Contact details in connection with planning policies and any statutory planning consents required in respect of the Design, construction and completion of the Works are:

(i) Aberdeen City Council

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

Ecology and Nature Conservation

4.4.4.13 Contact details in connection with any species or Sites protected by legislation which are likely to be affected by the Design, construction,

completion and maintenance of the Works including hard and soft landscape are:

(i) Scottish Natural Heritage

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

The Design shall include ecological impact mitigation and habitat creation associated with riparian corridors affected by the proposals. The Contractor shall consider the guidance provided in "Otters and Development" (SNH, 2008).

Cultural Heritage Interests

4.4.4.14 Contact details in connection with any cultural heritage interests which shall likely be affected by the Design, construction, completion and maintenance of the Works:

(i) Transport Scotland's Historic Environment Advisor

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

(ii) Historic Environment Scotland (for matters relating to Scheduled Monuments, Category A Listed Buildings, Registered Battlefields, Registered Gardens and Designed Landscapes)

Contact Person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

(iii) Aberdeen City Council

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

4.4.4.15 The Contractor 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 Environment Scotland, Aberdeen City Council and/or Transport Scotland's Historic Environment Advisor within the vicinity of the Site shall not be adversely affected by the Design, construction and completion of the Works without written consent from Historic Environment Scotland, Aberdeen City Council Archaeologist and/or Transport Scotland's Historic Environment Advisor as applicable.

4.4.4.16 The Contractor shall undertake all archaeological work relating to the Works including but not limited to, fieldwork, post-excavation work, reporting, archiving and publication if required.

4.4.4.17 The Contractor shall undertake an archaeological watching brief during the removal of topsoil, soil or any other overburden to investigate and record any archaeological remains encountered in the vicinity of [REDACTED].

4.4.4.18 In the event of archaeological remains, which in the opinion of the Contractor's archaeologist constitute complex archaeology, being discovered during the archaeological watching brief, the Contractor shall

cease construction work in the vicinity, erect temporary fencing around the remains, and immediately inform the Aberdeen City Council Archaeologist.

4.4.4.19 Any features of archaeological interest discovered during the archaeological watching brief shall be recorded in accordance with the Chartered Institute for Archaeologists guidelines.

4.4.4.20 Where the need for archaeological mitigation measures is identified, the Contractor shall submit a mitigation proposal to the Aberdeen City Council Archaeologist detailing the mitigation proposed.

4.4.4.21 Following written agreement of such with Aberdeen City Council Archaeologist, the Contractor shall undertake all mitigation measures in accordance with the requirements of the Aberdeen City Council Archaeologist, including inter alia the storage of archaeological finds.

4.4.4.22 On completion of all fieldwork, the Contractor shall submit a brief report to Discovery and Excavation in Scotland and prepare a post-excavation assessment report. The post-excavation assessment report shall include proposals for specialist analysis, processing, conservation, storage of finds, and reporting.

4.4.4.23 Within six months of receiving written agreement from the Aberdeen City Council Archaeologist for the post-excavation report the Contractor shall undertake specialist analysis, processing, conservation, storage of finds and reporting.

4.4.4.24 The Contractor shall prepare a final report detailing the results of all archaeological works undertaken including all specialist reporting, post excavation analysis and conclusions. If required, the Contractor shall submit a separate report suitable for publication in an appropriate archaeological journal or series.

4.4.4.25 The Contractor shall submit a digital copy of all final and specialist reports to the National Record of the Historic Environment and Aberdeen City Council Historic Environment Record within two months of their acceptance by the Aberdeen City Council Archaeologist.

4.4.4.26 The Contractor shall, as soon as possible and not more than eight weeks after the completion of all reporting prepare an archive and procure the deposition and long-term storage of the archive in the National Record of the Historic Environment.

Traffic Noise and Vibration

4.4.4.27 Contact details in connection with construction noise nuisance are:

(i) Aberdeen City Council, Environmental Health Officer

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

4.4.4.28 Should an exceedance of the traffic noise levels stated in the Environmental Statement be identified through model checking/interrogation and measurements after opening, the Contractor shall report this to the Engineer. Suitable mitigation measures to reduce the noise levels to those specified in 4.4.4.25 (i) of Part 1 having due regard for the requirements of the Contract, if required, shall be agreed with the Engineer.

Disruption During Construction

4.4.4.29 Refer to Part 1 – General Requirements

Visual Impact

4.4.4.30 Visual Impact shall be mitigated for the following visual receptors:

(i) users of the existing roads and footways;

(ii) residents in all adjacent properties; and

(iii) users of all adjacent public buildings, work places, footpaths and bridleways.

4.4.5 Scheme Specific Landscape Design Requirements

Scheme Specific Landscape Integration and Mitigation

4.4.5.1 The landscape Design shall provide integration of the Works with the surrounding landscape and built environment together with any other mitigation measures identified in the Environmental Assessment Documents.

4.4.5.2 The overall landscape Design philosophy generally shall respond to, or reflect the landscape through which it passes and shall reflect the largely urban landscape of the locality.

4.4.5.3 Contact details in connection with the landscape design approvals are:

(i) Transport Scotland

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

Landscape Drawings

4.4.5.4 Notwithstanding any other provision of the Contract, the landscape Design drawings shall be at an appropriate scale to show the nature and extent of the landscape Design.

4.4.5.5 The overall landscape Design shall be illustrated at a minimum scale of 1:500.

4.4.5.6 Cross sections, detail areas and otherwise shall be at a scale sufficient to show the detail of the Design.

4.4.5.7 The drawings shall show, but not be limited to, the following:

(i) landform by levels, contours, gradients and the transition of gradients;

(ii) planting layout, species and planting densities;

(iii) seeding layout, species mix and rates of application;

(iv) layout and details of any areas of special treatment, including SuDs structures etc.; and

(v) layout and details of all areas that require to be protected.

4.4.6 Protection of Existing Vegetation

General

4.4.6.1 The Design shall ensure that:

(i) all existing trees and vegetation within the Site shall be retained and preserved except where they shall be required to be removed to accommodate the Design; and

(ii) all grassed areas within the Site shall be maintained during the Works in accordance with Appendix 30/07 of the Specification.

4.4.6.2 The Contractor shall submit drawings indicating his proposals for clearance of existing trees and vegetation within the Site to the Engineer for agreement not less than ten working days prior to commencement of site clearance works. Such drawings shall clearly indicate the location and extent of areas of trees and vegetation to be removed and to be retained, and trees and vegetation to be protected in accordance with section 4.4.6 of Part 1.

Existing Landscape Features

4.4.6.3 The Design shall ensure that:

(i) all existing dry stone walling and other built landscape, prominent features and local landmarks within the Site shall be retained and preserved except where they shall be required to be removed to accommodate the Design; and

(ii) where dry stone walling is removed to accommodate the Design, it shall be stored and reinstated using traditional techniques on a new line Re-used stone shall be placed with existing lichen, if present, on the outside of the wall.

4.4.7 Landscape and Earthworks Design Requirements

4.4.7.1 Refer to Part 1 – General Requirements

4.4.8 Specific Earthworks/Landform Design Requirements

4.4.8.1 As a minimum the landform and grading Design shall comply with the Indicative Landscape and Planting Works Drawings as listed in Appendix 0/4 to Part 4 of these Employer's Requirements and be fully integrated with the planting Design, meet with the other landscape Design requirements contained in these Employer's Requirements and shall be in accordance with the Environmental Assessment Documents.

4.4.8.2 The specific requirements for landform design and construction shall achieve the following:

(i) Grading out of side slopes to allow a smooth transition into the adjoining landforms;

(ii) Mounding within areas of open space to help provide screening / separation between housing / footpaths / open space areas and the Dual Carriageway Link Road and Re-aligned Manor Avenue roads listed in Appendix A of Part 3;

(iii) Uplifting of hollows between road embankments;

(iv) All landscape earthworks shall generally be no steeper than 1:6;

(v) 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;

(vi) Free surface water drainage and avoidance of waterlogged areas or poorly drained hollows, where necessary incorporating drainage; and,

(vii) Where soil nailing is required soil nail heads shall be recessed and covered with topsoil and grass seeding. No mesh shall be left visible after the establishment of the grass sward.

4.4.9 Planting Design

General

4.4.9.1 Changes to the planting Design may be permitted where appropriate only in locations where the Design differs significantly from that indicated on the

Indicative Landscape and Planting Works Drawings as listed in Appendix 0/4 of the Specification.

4.4.9.2 Contact details in connection with the planting design approvals are:

(i) Transport Scotland

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

Plant Selection and Proof of Provenance

4.4.9.3 The following plants shall not be permitted in the Works:

(i) Gorse;

(ii) Broom;

(iii) Bare root evergreens; and

(iv) Bare root birch.

4.4.9.4 Plant stock to be used in the Design shall be selected from the following types:

(i) Extra heavy standard, heavy standard and standard trees, with tree guards;

(ii) Root-balled or container grown specimen conifers;

(iii) 1+2 transplanted trees; and

(iv) container grown plants grown in containers of 2 litres minimum size.

4.4.9.5 All planting areas shall be protected from damage by deer, rabbits and hares until the end of the Period of Establishment Maintenance. Protective measures shall be in place at the time of planting to ensure that no damage occurs. All evergreen trees shall be protected by tree or shrub shelters as appropriate, with stakes.

4.4.9.6 Stakes and guards to be removed from the Site with the agreement of the landscape architect and become the property of the Contractor.

Plant Densities

4.4.9.7 Refer to Part 1 – General Requirements

Extent of Planting

4.4.9.8 The Design shall ensure that:

(i) only grass shall be planted within 3 metres of a carriageway and no trees shall be planted within 5 metres of a carriageway.

Specific Design Requirements for Planting

4.4.9.9 Refer to Part 1 – General Requirements

Planting Mixes

4.4.9.10 Refer to Part 1 – General Requirements

Grass and Herbaceous Vegetation Specific Design Requirements

4.4.9.11 The seeding design shall be as the Indicative Landscape and Planting Works Drawings, as listed in Appendix 0/4 of the Specification, with grass seed mixture for roadside verges, visibility splays, cuttings, embankments and general landscape areas and species-rich grassland on the side slopes within SuDS detention basins or otherwise. The planting Design

shall include herbaceous planting associated with SuDs detention basins or otherwise.

4.4.9.12 Specific Requirements for Grass Establishment on Exchange Land Areas

(i) Notwithstanding the other provisions of the Contract, the Contractor shall programme implementation of grass seeding and turfing Works such that grassed areas on the areas of Exchange Land as identified on Compulsory Purchase Order sheet 11 referred to in Appendix S of Part 3 of these Employer's Requirements shall be fully established and fit for use by the public on completion of the Works and commencement of the Period of Establishment Maintenance.

(ii) Grass seeded areas sown during autumn (September- October) shall be protected from foot and vehicle traffic other than for maintenance purposes until the following June at the earliest. Spring (March-May) sown areas shall be protected from foot and vehicle traffic other than for maintenance purposes until late autumn.

(iii) Turf shall be laid a minimum of six weeks prior to completion of the Works.

Management of Existing Vegetation General Design Requirements

4.4.9.13 The written action report of remedial management measures shall include, but shall not be limited to:

(i) felling or pruning of any dead, diseased or unsafe trees or plants blocking signs and lines of sight;

(ii) thinning of any existing 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; and

(iv) measures to mitigate the potential for wind throw in areas of trees affected by the Works.

4.4.10 Landscape Design Implementation

4.4.10.1 Refer to Part 1 – General Requirements

4.4.11 Landscape Maintenance

4.4.11.1 Refer to Part 1 – General Requirements

4.4.12 Scheme Specific Environmental Requirements

4.4.12.1 CEEQUAL

(i) The Contractor shall appoint a CEEQUAL Assessor who shall work with the Employer and the Employer's CEEQUAL Assessor. The Contractor shall with the assistance of the Employer, seek to deliver an 'excellent' whole project award rating, as defined by CEEQUAL.

(ii) The Employer will be responsible for all fees payable to CEEQUAL in relation to their verification of the whole project assessment.

(iii) The Contractor shall put in place the systems and personnel that are required to ensure that all necessary data gathering, collation and management is carried out effectively in working towards an 'excellent' whole project award rating.

4.4.12.2 Design Requirements for Footpaths within Landscape Areas

(i) The design of the Works shall include the provision of new 2.0m wide paved surfaced footpaths edged on both sides with concrete heel kerbs, designed in accordance with Transport Scotland's Roads for All Good Practice Guide for Roads, at the following locations as shown on the Indicative Landscape and Planting Works drawings:

(a) between reference points E03 (the footway on Manor Drive) and E04 (the footway on Logie Terrace);

(b) between reference points E05 (the footway on the new Link Road) and E06 (the footway on Logie Avenue);

(c) between reference point E07 (the site of the proposed play area to be installed by Aberdeen City Council) and E08 (the footway on Logie Avenue); and

(d) between reference points E09 (the footway on Manor Drive and E10 (footpath through landscape area).

(ii) The design of the Works shall include provision of at grade tie-ins between existing footways to be retained and proposed footpaths within landscaped areas, with adjustments to the vertical and / or horizontal alignment where necessary.

(iii) The design of footpaths between reference points E03 and E04 and between reference points E09 and E10 shall include signage warning of steep gradients at the start and end of each section of footpath where the gradient exceeds 5%.

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

(a) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone: [REDACTED]

in connection with the detailed design and alignment of the footpaths.

The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure.

4.4.12.3 Design Requirements for Play Areas

(i) The design of the Works shall include the provision of new play areas at the following locations as shown on the Indicative Landscape and Planting Works drawings:

(a) At reference point E01 (between the new Link Road and Logie Avenue), where a level grassed area shall be provided to facilitate the future installation of safety surfacing and play equipment by Aberdeen City Council; and

(b) At reference point E02 (between Logie Avenue and the new Link Road), where grassed earth 'play mounds' shall be provided.

(ii) The grassed 'play mounds' at reference point E02 (between Logie Avenue and the new Link Road) shall comprise two circular mounds and a linear bank, each of which shall be approximately 600mm in height above the surrounding grassed area and have side slopes not steeper than 1:3, or similar as agreed with Aberdeen City Council.

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

(a) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone: [REDACTED]

in connection with the detailed design and alignment of the play areas.

The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure.

4.5 Settlement

4.5.1 Refer to Part 1 – General Requirements.

4.6 Instrumentation

4.6.1 The Contractor shall ensure the properties adjacent to the works are not adversely affected by the temporary or permanent works. This shall be demonstrated by means of monitoring of groundwater levels in the vicinity of cuttings and major excavations and surface monitoring points attached and/or adjacent to properties as necessary.

4.6.2 The control points shall be installed at the following locations, referenced to Ordnance Survey datum, and be co-incident with Design chainages:

(i) where embankments are of greater than 2 metres in height, control points shall be installed in the pavement at 10 metre intervals on both edges of the carriageway and on the centreline.

4.6.3 The Contractor 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 Contractor as soon as practicable.

4.6.4 All boreholes with monitoring wells that are no longer required, including those in dry condition, shall be decommissioned by the Contractor in accordance with the requirements of The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR) and their amendments and SEPA guidance on "Decommissioning Redundant Boreholes and Wells".

4.7 Contaminated Land

4.7.1 Contact details in connection with treatment and disposal of all contaminated materials are:

(i) SEPA

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

(ii) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

4.8 Requirements for Intelligent Transport Systems

4.8.1 Scope of Intelligent Transport Systems Works

4.8.1.1 The Contractor shall provide the civil infrastructure works to allow Aberdeen City Council's specialist provider to install the Intelligent Transport Systems (ITS) technology equipment.

4.8.1.2 Two ITS sites shall be provided at the locations identified in Table 4.8.1.2:

Table 4.8.1.2 ITS Equipment Sites

Site Number	Technology Equipment	Location
1	• One CCTV camera • Two ANPR cameras	Dual Carriageway Link Road / A90 North Anderson Drive Junction
2	• One CCTV camera • Four ANPR cameras	Dual Carriageway Link Road / A96 Auchmill Road Junction

4.8.1.3 The Design shall ensure:

(i) the safety of road users;

(ii) the safety of the maintenance personnel through ease of access, and proximity of the site relative to the carriageway; and

(iii) that the visual impact of the site is minimised.

4.8.1.4 The Contractor shall consult and comply with the requirements of

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

with regards to the positioning of the ITS sites identified in Table 4.8.1.2.

The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure.

4.8.2 Closed Circuit Television Facilities

4.8.2.1 The Contractor shall design and construct the foundation arrangements, ducting and power to allow Aberdeen City Council's specialist provider to install the CCTV mast and equipment. The Contractor shall include any appropriate fixings to allow fitment of the CCTV mast by Aberdeen City Council's provider.

4.8.2.2 The Contractor shall consult and comply with the requirements of

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

to obtain details of the mast and CCTV equipment to be mounted on the foundation to allow the Contractor to undertake structural calculations, as well as to provide the appropriate fixings, power supply and duct connections.

The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure.

4.8.3 Automatic Number Plate Recognition

4.8.3.1 The Contractor shall design and construct the foundation arrangements, ducting and power to allow Aberdeen City Council's specialist provider to install the ANPR Camera mast and equipment. The Contractor shall include any appropriate fixings to allow fitment of the ANPR Camera mast by Aberdeen City Council's provider.

4.8.3.2 The Contractor shall consult and comply with the requirements of

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

to obtain details of the mast and ANPR equipment to be mounted on the foundation to allow the Contractor to undertake structural calculations, as well as to provide the appropriate fixings, power supply and duct connections.

The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure.

4.8.3.3 The Contractor shall consult and comply with the requirements of

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

in connection with obtaining details of the ANPR camera mounting brackets, where ANPR equipment is to be co-located on a CCTV mast.

The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure.

4.8.4 Power Supply

4.8.4.1 The Contractor shall be responsible for the power supply associated with the ITS Equipment Sites.

4.8.4.2 The Contractor shall consult and comply with the requirements of

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

in connection with the power consumption requirements of the ITS Technology Equipment.

The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure.

4.8.4.3 The Contractor shall design, supply and install of all the equipment cabinets required for the ITS Equipment and their associated power supplies. The Contractor shall also arrange for the provision of an independent power supply to the electrical termination pillars for all ITS Equipment with the Electricity Supply Contractor.

4.8.4.4 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.

4.8.5 Ducting

4.8.5.1 The Contractor shall design, supply and install the ducting for the CCTV facilities, ANPR Cameras and the installation of a fibre optic network by Aberdeen City Council as detailed in Section 4.8.2.2 and 4.8.3.2, Appendix 5/2 of the Specification and Appendix 1/16 of the Specification.

4.8.5.2 While complying with Section 4.8.5.1, the Contractor shall design, supply and install two ducts, including cross carriageway ducting and associated chambers at each of the following locations:

(i) [REDACTED]

(ii) [REDACTED]

(iii) [REDACTED]

The ducts and chambers shall be provided in accordance with Appendix 5/2 of the Specification.

4.8.5.3 Two cross carriageway ducts shall be provided at each of the following locations:

(i) [REDACTED]

(ii) [REDACTED]

(iii) [REDACTED]

4.8.5.4 The Contractor shall consult and comply with the requirements of

(i) Aberdeen City Council

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

in connection with the termination of ducting, the connection of ducting to the existing network and the location of the cross carriageway ducts detailed in Section 4.8.5.3.

The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure.

4.8.6 Vehicle Detection Facilities

4.8.6.1 The Contractor shall install infrastructure to support the Vehicle Detection (Data Service) equipment referenced in this Section 4.8.6.

4.8.6.2 The Contractor shall install infrastructure to allow monitoring of all traffic entering and leaving the proposed link road. Loop arrays shall be located within all lanes of the proposed link road at the following locations:

(i) on the Dual Carriageway Link Road to the east of the Dual Carriageway Link Road / Realigned Manor Avenue / Logie Avenue Junction; and

(ii) on the Dual Carriageway Link Road to the west of the Dual Carriageway Link Road / Realigned Manor Avenue / Logie Avenue Junction.

4.8.6.3 For each site the Contractor shall:

(i) provide the Type D loop chamber in the verge prior to installing vehicle inductive loops and loop feeder cables;

(ii) provide the vehicle inductive loops in accordance with MCH1540 not greater than 100m from the cabinet;

(iii) provide the loop feeder cables; and

(iv) join the inductive loops onto the loop feeder cables in a Type D chamber;

(v) install the Employer issued equipment cabinet onto a suitable foundation;

(vi) terminate the loop feeder cables into the cabinet;

(vii) provide suitable equipment protection and hard landscaping in full compliance with TD 19/06; and

(viii) test the functionality of the installed inductive loops.

4.8.6.4 Where vehicle inductive loop cables do not share a duct or chamber network route with other cables, it is permissible to terminate such cables directly into the cabinet.

4.8.6.5 The Contractor shall consult and comply with the requirements of

(i) Transport Scotland

Contact Person: [REDACTED]

Email: [REDACTED]

in connection with the provision of vehicle detection facilities.

The Contractor shall provide the Engineer with the completed Consultation Certificate(s) in accordance with the Certification Procedure.

5. UNDERTAKERS WORKS AND PRIVATE APPARATUS WORKS

5.1 General

5.1.1 Existing Private Apparatus

The Contractor shall locate any existing private apparatus within the Land Made Available and carry out appropriate protection or diversion works where there is interference with the works.

Contact details for Statutory Undertakers in connection with the location of apparatus and any diversion works are:

(i) BT Openreach

Contact person: [REDACTED]
Email: [REDACTED]
Telephone number: [REDACTED]

(ii) Scottish Water

Contact person: [REDACTED]
Email: [REDACTED]
Telephone number: [REDACTED]

(iii) Scottish and Southern Energy

Contact person: [REDACTED]
Email: [REDACTED]
Telephone number: [REDACTED]

(iv) Scotland Gas Networks

Contact person: [REDACTED]
Email: [REDACTED]
Telephone number: [REDACTED]

(v) Vodafone

Contact person: [REDACTED]
Email: [REDACTED]
Telephone number: [REDACTED]

(vi) Trafficmaster

Contact person: [REDACTED]
Email: [REDACTED]
Telephone number: [REDACTED]

(vii) City Fibre

Contact person: [REDACTED]
Email: [REDACTED]
Telephone number: [REDACTED]

5.1.2 Existing Private Water Supplies and Septic Tanks

Not used.

5.1.3 Proposed Private Apparatus

Not used.

5.2 Advance Indicative Undertakers' Works

5.2.1 City Fibre have been instructed to undertake advance works compromising diversion reference CF-01B as detailed in Appendix 1/16 of the Specification. These works will commence prior to Contract Award and will continue thereafter. In accordance with Volume 2 Conditions of Contract Clauses 27 and 31 and Annex 1 'Special Requirements Relating to Undertaker and Other Relevant Companies', from the date of Contract Award, the Contractor acting as the Overseeing Organisation's Agent will be responsible for managing these works on behalf of the Employer.

6. SUPERVISION, SAMPLING AND TESTING REQUIREMENTS

6.1 Supervision

6.1.1 Notwithstanding any other provision of the Contract the Contractor shall ensure that a Designer's Site Representative, supported by a minimum of one engineer and a minimum of two experienced and competent engineering works inspector/clerk of works all from the Designer's organisation, shall be based on the Site throughout the period of the construction and completion of the Works unless otherwise consented to in writing by the Engineer. This shall include at least one Chartered geotechnical/geological/structural Designer's Section Engineer Representative during specialist Works, with relevant experience of site supervision as a Designer's Site Representative within the Design, construction and completion process.

6.2 Sampling and Testing

6.2.1 Refer to Part 1 – General Requirements.

6.3 Compliance Surveys

6.3.1 General

6.3.1.1 Contact details for obtaining the relevant details of the RMMS referencing system are:

(i) Transport Scotland, Trunk Roads and Bus Operations

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

6.3.2 Deflectograph Surveys (DS) of Flexible Pavements

6.3.2.1 Not used.

6.3.3 Principal Inspections for All Structures

6.3.3.1 Refer to Part 1 – General Requirements.

6.3.3.2 The Contractor shall ensure that the relevant local authority is invited to attend as a witness to all Principal Inspections.

The details for the relevant local authority for inspection of the Works are:

(ii) Aberdeen City Council

Contact: [REDACTED]

Email: [REDACTED]

Telephone Number: [REDACTED]

7. AS CONSTRUCTED REQUIREMENTS

7.1 General

7.1.1 Refer to Part 1 – General Requirements.

7.1.2 The Contractor shall liaise and coordinate with the relevant roads authority and the Operating Company to ensure that they understand their routine, cyclic and winter maintenance requirements.

The details for the relevant roads authority for inspection of the Works are:

(i) Aberdeen City Council

Contact: [REDACTED]

Email: [REDACTED]

Telephone Number: [REDACTED]

(ii) BEAR Scotland Ltd

Contact person: [REDACTED]

Email: [REDACTED]

Telephone Number: [REDACTED]

7.2 Health and Safety File

7.2.1 Refer to Part 1 – General Requirements.

7.3 As-Constructed Records

7.3.1 Refer to Part 1 – General Requirements.

7.4 Maintenance Manuals

7.4.1 Refer to Part 1 – General Requirements.

7.5 Network Referencing & Inventory

7.5.1 Inventory Requirements

Contact details in connection with Inventory Requirements are:

(i) Transport Scotland (Asset Management Branch of Trunk Roads and Bus Operations)

Contact person: [REDACTED]

Email: [REDACTED]

Telephone number: [REDACTED]

7.6 Building Information Modelling (BIM)

7.6.1 Refer to Part 1 – General Requirements.

8. CERTIFICATION PROCEDURE

8.1 Introduction

8.1.1 Refer to Part 1 – General Requirements.

8.2 Design Certificates and Design Check Certificates

8.2.1 Refer to Part 1 – General Requirements.

8.3 Design Interim Certificates and Design Check Interim Certificates: Staged Procedure

8.3.1 Refer to Part 1 – General Requirements.

8.4 Information to be provided with Design Certificates, Design Check Certificates, and/or Design Interim Certificates and Design Check Interim Certificates

8.4.1 Refer to Part 1 – General Requirements.

8.5 Interim Construction Certificates

8.5.1 Refer to Part 1 – General Requirements.

8.6 Final Construction Certificates

8.6.1 Refer to Part 1 – General Requirements.

8.7 Interim Post Construction Certificates

8.7.1 Refer to Part 1 – General Requirements.

8.8 Final Post Construction Certificates

8.8.1 Refer to Part 1 – General Requirements.

8.9 Consultation Certificates

8.9.1 Refer to Part 1 – General Requirements.

8.10 Temporary Works Certificates

8.10.1 Refer to Part 1 – General Requirements.

8.11 Road Safety Audits

8.11.1 Refer to Part 1 – General Requirements.

8.12 Departures from Standard

8.12.1 Where the Contractor proposes to incorporate a Departure from Standard from Transport Scotland's 'Roads For All: Good Practice Guide for Roads' within the Design, the Contractor shall seek the formal approval in writing of Transport Scotland.

Contact details in connection with the submission of Departures from Standard from Transport Scotland's 'Roads For All: Good Practice Guide for Roads' are:

(i) Transport Scotland

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

8.12.2 Where the Contractor proposes to depart from Aberdeen City Council's 'Guidelines and Specifications for Roads within Residential and Industrial Developments, September 1998' within the Design, the Contractor shall consult and comply with Aberdeen City Council.

Contact details in connection with proposals to depart from Aberdeen City Council's 'Guidelines and Specifications for Roads within Residential and Industrial Developments, September 1998' are:

(i) Aberdeen City Council

Contact person:	[REDACTED]
Email:	[REDACTED]
Telephone number:	[REDACTED]

8.13 Walking, Cycling and Horse-Riding Assessment and Review Requirements

8.13.1 Refer to Part 1 – General Requirements.

8.14 Provenance Certificates

8.14.1 Refer to Part 1 – General Requirements.