This is Document "Schedule 7 Part 1" referred to in this Contract

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 1

MANAGEMENT, INSPECTION AND CYCLIC MAINTENANCE

CONTENTS

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MANAGEMENT, INSPECTION AND CYCLIC MAINTENANCE

1 MANAGEMENT, INSPECTION AND CYCLIC MAINTENANCE

1.1 Definitions

1.1.1 "Detailed Inspections" means detailed inspections as referred to in paragraphs 1.7.1 to 1.7.7 inclusive of this Part 1 of this Schedule 7.

1.1.2 "Hazard Notice" means a notice issued to the Operating Company by the Performance Audit Group identifying a dangerous situation.

1.1.3 "Inspections" means

(i) Safety Inspections and

(ii) Detailed Inspections.

1.1.4 "Observation Resulting from Inspection" means a notice issued to the Operating Company by the Performance Audit Group identifying circumstances requiring action by the Operating Company.

1.1.5 "Safety Inspections" means safety inspections as referred to in paragraphs 1.5.1 to 1.5.7 inclusive of this Part 1 of this Schedule 7.

1.1.6 "Rock Patrols" means patrols to supplement Safety Inspections to identify rocks or rock faces which shall be a Category 1 Defect.

1.1.7 "Safety Patrols" means safety patrols as referred to in paragraphs 1.6.1 to 1.6.3 inclusive of this Part 1 of this Schedule 7.

1.2 Introduction

1.2.1 This Part 1 of this Schedule 7 specifies the management, Inspection and Cyclic Maintenance requirements that shall be adopted and implemented by the Operating Company for the day to day management, Inspection and Cyclic Maintenance Operations for the Unit.

1.2.2 The Inspections, Safety Patrols and Cyclic Maintenance requirements include but shall not be limited to the management of and requirements for a range of activities which shall generally be cyclical or short term in nature and necessary to keep the Trunk Roads in a good and safe working order and safeguard the environment.

1.2.3 There may be instances where the Inspections, Safety Patrols and Cyclic Maintenance requirements shall be varied to take account of local conditions.

1.2.4 The Operating Company shall carry out the additional local Inspections Safety Patrols and Cyclic Maintenance requirements listed in Annex 7.1/A of this Part 1 of this Schedule 7.

1.2.5 Paragraphs 4.1.1.1 to 4.33.3.1 inclusive of this Part 1 of this Schedule 7 do not cover major structural maintenance for the replacement or renewal of worn-out road pavements although the procedural requirements may assist pavement management.

1.2.6 This Part 1 of this Schedule 7 shall apply to non-structural elements of Structures.

1.2.7 At the commencement of the First Annual Period there shall likely be items of construction Plant and equipment on the Unit that shall be required to be provided and maintained.

Such items shall normally be related to the safety of both the Unit and users of the Unit including but not limited to

(i) temporary safety barriers

(ii) temporary supports to Structures and

(iii) temporary traffic management equipment and the like to make safe Category 1 Defects.

1.3 Routine Maintenance and Management System

1.3.1 The Operating Company shall use the Routine Maintenance and Management System provided by the Director in accordance with Part 3 of Schedule 4 to implement monitor and record Inspections Safety Patrols Category 1 and Category 2 Defects and Cyclic Maintenance Operations and Works undertaken on the Trunk Roads on the Unit.

1.3.2 The Operating Company shall ensure that the Routine Maintenance and Management System data supports evidence for fatal accident inquiries and for the consideration of damages claims by third parties which arise as a result of alleged/confirmed Category 1 and Category 2 Defects in the Trunk Roads within the Unit.

A Data Capture Device shall be a hand held electronic device capable of capturing a range of data and downloading such data onto the Routine Maintenance Management System.

1.3.3 Data Capture Devices shall be used to record

(i) Category 1 and Category 2 Defects and

(ii) Inspections and Safety Patrol data.

1.3.4 All Category 1 Defects and any other data identified during Inspections and Safety Patrols shall be recorded within the Routine Maintenance and Management System within 24 hours of identification.

All Category 2 Defects and any other data identified during Inspections and Safety Patrols shall be recorded within the Routine Maintenance and Management System within 4 Working Days of identification.

1.3.4.1 The Inspections and Safety Patrols data shall include but not be limited to

(i) date of Inspection or Safety Patrol

(ii) time that each section was commenced

(iii) link

(iv) section

(v) start chainage

(vi) end chainage

(vii) names of the inspectors

(viii) method of inspection

(ix) details of weather conditions

(x) road surface conditions

(xi) Category 1 and Category 2 Defects – if none input "none" and

(xii) other relevant information

1.3.5 The Routine Maintenance and Management System provided by the Director during the Mobilisation Period shall include the dates of the last Inspections, Safety Patrols and Cyclic Maintenance Operations and Works undertaken by the previous operating company.

1.3.6 Where the dates of the last Inspections Safety Patrols or Cyclic Maintenance shall not be available in the Routine Maintenance and Management System provided by the Director during the Mobilisation Period the next Inspections, Safety Patrols and Cyclic Maintenance shall be deemed to be immediately due.

1.3.7 Records of all Site Operations and Works shall be incorporated within the Routine Maintenance and Management System within 4 Working Days of completion of such Site Operations or Works

1.3.7.1 Cyclic Maintenance records shall include but not be limited to

(i) dates of execution of Site Operations or Works

(ii) link

(iii) section

(iv) start chainage

(v) end chainage

(vi) Operations or Works carried out

(vii) Methods used and

(viii) Operating instruction reference.

1.3.8 The Operating Company shall include in its Quality Management System including the Quality Plan procedures for validation of all data for correctness and completeness before it shall be incorporated within the Routine Maintenance and Management System.

1.3.9 The Operating Company shall maintain the accuracy of the Routine Maintenance and Management System data at all times.

1.3.10 When the Operating Company shall discover any error or omission in the Routine Maintenance and Management System data such error or omission shall be corrected in the Routine Maintenance and Management System by the Operating Company within 4 Working Days of its discovery.

1.3.11 If the Operating Company decides not to complete the transfer of landscape inventory data into the Routine Maintenance and Management System during the Mobilisation Period as referred to in paragraph 1.3.2.1 to 1.3.2.2 inclusive of Part 3 of Schedule 4 the Operating Company shall during the Mobilisation Period prepare a landscape maintenance schedule itemising the Detailed Inspections and Cyclic Maintenance requirements for each of the following soft landscaping areas

(i) grass, bulbs and wildflower areas

(ii) established trees and shrubs

(iii) waterbodies and

(iv) special ecological measures.

The landscape maintenance schedule shall be submitted to the Director for written consent not later than 90 days before the start of the First Annual Period.

The landscape maintenance schedule shall include provisions for recording requirements for

(i) Detailed Inspections

(ii) Cyclic Maintenance

(iii) dates when Inspections and Cyclic Maintenance shall be executed

(iv) results of Detailed Inspections and

(v) actions taken.

1.3.12 If the Operating Company does not transfer the landscape inventory data into the Routine Maintenance and Management System during the Mobilisation Period then during the First Annual Period the Operating Company shall update the landscape maintenance schedule within 4 Working Days of carrying out Detailed Inspections and items of Cyclic Maintenance by completing the records relating to the requirements referred to in Annex 7.1/B of this Part 1 of this Schedule 7.

1.3.13 The Operating Company shall allow during the First Annual Period transfer of all date with the landscape maintenance schedule and the Routine Maintenance and Management System.

1.4 Inspections and Safety Patrols

1.4.1 The Operating Company shall carry out the following types of Inspections and Safety Patrols

(i) Safety Inspections

(ii) Safety Patrols and

(iii) Detailed Inspections.

1.4.2 Inspections and Safety Patrols shall be planned and executed to identify Category 1 and Category 2 Defects.

1.4.3 Any Category 1 and Category 2 Defects identified during Inspections and Safety Patrols shall be dealt with as referred to in paragraphs 2.2.1 to 2.2.4 inclusive and 2.3.1 and 2.3.2 of this Part 1 of this Schedule 7.

1.4.4 Annex 7.1/B to this Part 1 of this Schedule 7 lists types of Defect that are Category 1 Defects.

1.4.5 Annex 7.1/C to this Part 1 of this Schedule 7 specifies the Trunk Roads on which Safety Patrols shall be undertaken.

1.4.6 Annex 7.1/D to this Part 1 of this Schedule 7 details

(i) Detailed Inspection codes

(ii) Cyclic Maintenance codes and

(iii) Permitted inventory codes.

1.4.7 The Operating Company shall programme check lists for inventory items within the Routine Maintenance and Management System into the Data Capture Devices used for Inspections and Safety Patrols such that

(i) only the permitted inventory codes and Cyclic Maintenance codes can be used with the relevant Detailed Inspection codes for each infrastructure item as shown in Annex 7.1/D to this Part 1 of this Schedule 7 and

(ii) inventory codes can only be used if the inventory item exists in the individual section.

1.5 Safety Inspections

1.5.1 Safety Inspection shall be carried out at frequencies not exceeding 7 days on all Trunk Roads.

1.5.2 Safety Inspections shall be designed primarily to identify Category 1 Defects.

1.5.3 Where possible Safety Inspections shall be carried out during off-peak traffic periods in order to minimise traffic disruption.

1.5.4 Each year at least 2 Safety Inspections shall be carried out either during or immediately following a period of wet weather to identify areas prone to flooding.

There shall be a maximum period of 3 months between wet weather Safety Inspections.

1.5.5 Safety Inspections shall inspect all that can practicably be seen from a slow moving vehicle within the boundary of the Trunk Road.

1.5.6 The inspection speeds for Safety Inspections shall be as the estimated inspection speeds referred to in the Operating Company's Quality Management System as required by paragraph 1.8.2.1 (ii) (c) of this Part 1 of this Schedule 7.

1.5.7 Night time Safety Inspections for road traffic signs and road lighting shall be carried out every 14 days during October to March inclusive and every 28 days during April to September inclusive of each Annual Period.

1.6 Safety Patrols

1.6.1 Safety Patrols shall be carried out on Trunk Roads described in Annex 7.1/C and at intervals not exceeding 7 days midway between Safety Inspections.

1.6.2 Safety Patrols shall be designed primarily to identify Category 1 Defects.

1.6.3 The inspection speeds for Safety Patrols shall be as the estimated Inspection speeds stated in the Operating Company's Quality Management System as required by paragraph 1.8.2.1 (ii) (c) of this Part 1 of this Schedule 7.

1.7 Detailed Inspections

1.7.1 Detailed Inspections shall be walking inspections designed primarily to identify Category 2 Defects.

1.7.2 The Operating Company shall carry out Detailed Inspections in accordance with the requirements of the inventory items as referred to in paragraphs 4.1.1.1 to 4.33.3.1 inclusive of this Part 1 of this Schedule 7.

The Inspection intervals referred to in paragraphs 4.1.1.1 to 4.33.3.1 inclusive of this Part 1 of this Schedule 7 shall not be exceeded.

1.7.3 Subject to paragraph 1.7.4 of this Part 1 of this Schedule 7 of this Contract and unless otherwise stated in paragraphs 4.1.1.1 to 4.33.3.1 inclusive the Operating Company shall carry out Detailed Inspections of the inventory items as referred to in paragraphs 4.1.1.1 to 4.33.3.1 inclusive every 12 months.

Detailed Inspections by the Operating Company on motorways and dual carriageways shall be carried out from the footway hardshoulder grass verge on nearside Lane as appropriate.

1.7.4 Where the inventory items referred to in paragraphs 4.1.1.1 to 4.33.3.1 inclusive of this Part 1 of this Schedule 7 of this Contract shall be within or adjacent to a central reserve on a motorway or dual carriageway and the Detailed Inspection of those inventory items would require a Lane Occupation the Operating Company shall carry out Detailed Inspections of those inventory items every 24 months.

1.7.5 The Operating Company shall arrange Detailed Inspections in such a manner as to minimise disruption to traffic other road users and the public whilst ensuring adequate access for proper inspection and a safe working environment for the inspection personnel involved.

1.7.6 Whenever practicable Detailed Inspections which necessitate Lane Occupations shall be carried out in conjunction with other Operations.

Where separate Lane Occupations shall be necessary Detailed Inspections shall be undertaken in off-peak traffic conditions.

1.7.7 The Operating Company shall plan its schedule of Detailed Inspections to that when a Lane Occupation shall be used for Detailed Inspections, as far as reasonably possible all Detailed Inspections that would require occupation of that Lane are carried out during that Lane Occupation.

1.8 Quality Management System for Inspections and Safety Patrols

1.8.1 General

1.8.1.1 The Operating Company shall include or procure the inclusion of documented procedures for the effective management of Inspections Safety Patrols additional local requirements and Cyclic Maintenance activities in the Quality Management System as required by Part 1 of Schedule 5.

1.8.1.2 The procedures shall include but not be limited to

(i) how the Operating Company shall use the Routine Maintenance and Management System supplied by the Director as referred to in Part 3 of Schedule 4

(ii) Operations to be carried out by Inspection and Safety Patrol (and rock patrol if required) teams to make Category 1 Defects safe at the time of Inspection or Safety Patrol by immediate repairs or removal of hazards or other procedures for making safe or dealing with exceptional circumstances

(iii) storage and retrieval of all records using either the Routine Maintenance and Management System or other storage facilities

(iv) checklists to be used for all types of Inspections and Safety Patrols (and Rock Patrols if required)

(v) records to be maintained to support the robustness of all types of Inspections and Safety Patrols (and Rock Patrols if required)

(vi) how the Operating Company shall validate all data for correctness and completeness before it shall be incorporated into the Routine Maintenance and Management System and

(vii) how the Operating Company shall monitor and demonstrate the accuracy and rigorousness of its inspections and Safety Patrols (and Rock Patrols if required).

1.8.2 Safety Inspections and Safety Patrols

1.8.2.1 The procedures for Safety Inspections and Safety Patrols (and Rock Patrols if required)shall include but not be limited to

(i) how the Operating Company shall rigorously carry out its Safety Inspection and Safety Patrol (and rock patrol if required) duties including but not limited to

(a) vehicles to be utilised and

(b) equipment to be carried by vehicles and

(ii) Inspection and Safety Patrol (and rock patrol if required) routes including but not limited to

(a) programmes

(b) resources

(c) estimated Inspection speeds and

(d) average durations.

1.8.3 Detailed Inspections

1.8.3.1 The procedures for Detailed Inspections shall include but not be limited to

(i) how the Operating Company shall rigorously carry out their Detailed Inspection duties

(ii) equipment to be used by Detailed Inspection teams

(iii) programmes and

(iv) resources.

1.8.4 Cyclic Maintenance

1.8.4.1 The procedures for Cyclic Maintenance shall as a minimum include but not be limited to how the Operating Company shall rigorously carry out all Cyclic Maintenance.

1.8.5 Category 2 Defects

1.8.5.1 The procedures for Category 2 Defects shall as a minimum include but not be limited to how the Operating Company will

(i) group Category 2 Defects together and prioritise the repairs and

(ii) prepare and submit programmes and Bids for the repair of Category 2 Defects in accordance with the requirements of Part 1 of Schedule 4.

1.8.6 The Operating Company shall include procedures in its Quality Management System whereby any of its staff and employees travelling within the Unit shall report any Category 1 Defects which they observe.

2 DEFECT CATEGORIES AND RESPONSE TIMES

2.1 Category 1 and Category 2 Defects

2.1.1 Category 1 Defects as referred to in Annex 7.1/B to this Part 1 of this Schedule 7 shall be dealt with as required by paragraphs 2.2.1 to 2.2.4 inclusive of this Part 1 of this Schedule 7.

2.1.2 Category 2 Defects shall be dealt with as required by paragraphs 2.3.1 and 2.3.2 of this Part 1 of this Schedule 7.

2.1.3 When classifying Category 1 and Category 2 Defects the Operating Company shall give consideration to the potential impact upon all road users including but not limited to

(i) motorists

(ii) pedestrians

(iii) cyclists

(iv) motorcyclists and

(v) equestrians.

2.1.4 Annex 7.1/E to this Part 1 of this Schedule 7 refers to Defect codes that shall be used to record details of Category 1 and Category 2 Defects.

2.2 Category 1 Defects

2.2.1 Category 1 Defects shall be dealt with by the Operating Company as follows in priority order

2.2.1.1 The Operating Company's Inspection team Safety Patrol incident support service team or initial Emergency Response Resource shall if practicable make the Category 1 Defect safe when it shall have been identified by taking one of the following actions as appropriate

(i) execute immediate repairs

(ii) remove the hazard or

(iii) take such other measures as shall be necessary to protect the public and other users of the Unit.

Where a Category 1 Defect cannot be repaired immediately and the hazard cannot be removed by the Inspection team Safety Patrol incident support service team or initial Emergency Response Resource the Operating Company's Inspection team, Safety Patrol incident support service team or initial Emergency Response Resource shall erect warning signs on the verge in advance of the Category 1 Defect.

Such signs shall be maintained and remain in place until such time as temporary or permanent repairs as appropriate shall have been completed.

2.2.1.2 Where a Category 1 Defect shall be of a very serious nature rendering a Trunk Road unsafe for road users, the Operating Company shall in co-ordination with the Police close the appropriate part of the Trunk Road for as short a period as possible whilst remedial action shall be undertaken.

2.2.1.3 Where an immediate repair of the Category 1 Defect or removal of the hazard cannot be undertaken by the Inspection team Safety Patrol incident support service

team or initial Emergency Response Resource temporary or permanent repairs shall be undertaken as soon as possible but in any case not later than as required by the following timescales

(i) Category 1 Defects on Carriageways: no later than 06:00 following identification and

(ii) all other Category 1 Defects: within 24 hours of the identification.

2.2.2 All Category 1 Defects shall be permanently repaired within

(i) the specific period referred to in this Part 1 of this Schedule 7 or

(ii) if no specific period shall be referred to, 28 days.

2.2.3 Where Category 1 Defects with potentially serious consequences for users of the Trunk Road shall have been made safe by means of temporary signing or repair the Operating Company shall make arrangements for a special Inspection regime to ensure that the continued integrity of the signing or repair shall be maintained until a permanent repair can be made.

2.2.4 Any actions pursuant to paragraphs 2.2.1 to 2.2.3 inclusive of this Part 1 of this Schedule 7 undertaken by an Inspection team Safety Patrol or incident support services team shall not be deemed to be Emergency Response Operations.

2.3 Category 2 Defects

2.3.1 The Operating Company shall log all Category 2 Defects, group together and prioritise the repair of Category 2 Defects.

2.3.2 The Operating Company shall prepare and submit programmes and Bids in accordance with the requirements of Parts1 and 2 of Schedule 4 for the repair of Category 2 Defects.

3 HAZARD NOTICES AND OBSERVATIONS IDENTIFIED BY PERFORMANCE AUDIT GROUP

3.1 General

3.1.1 The Performance Audit Group may observe situations within the Unit which shall be immediately hazardous.

In such circumstances the Director has authorised the Performance Audit Group to immediately issue a Hazard Notice to the Operating Company.

3.1.2 The Performance Audit Group may also identify other circumstances where their observations require an action by the Operating Company.

In such circumstances the Director has authorised the Performance Audit Group to immediately issue an Observation Resulting from an Inspection.

Observations Resulting from Inspection shall be intended to improve the flow of information from Performance Audit Group to the Operating Company.

3.1.3 The purpose of both the Hazard Notice and the Observation Resulting from Inspection shall be to provide information to the Operating Company and the Director as quickly as possible.

3.1.4 Hazard Notices and Observations Resulting from Inspection shall not be deemed as instructions from the Performance Audit Group or the Director to the Operating Company.

3.1.5 Hazard Notices and Observations Resulting from Inspection shall be a method of formally identifying issues on the Trunk Road network and requesting responses from the Operating Company.

3.1.6 The Operating Company shall address and respond to any Hazard Notice or Observation Resulting from Inspection without delay in accordance with the other provisions of this Contract.

3.1.7 Hazard Notices and Observations Resulting from Inspections may refer to any topic and shall not be restricted to matters solely concerning Cyclic Maintenance Operations.

3.1.8 The Operating Company shall supply one e-mail address to which all Hazard Notices and Observations Resulting from Inspection shall be addressed.

3.1.9 The Operating Company shall include procedures in the Quality Management System for monitoring receiving distributing replying to and actioning all Hazard Notices and Observations Resulting from Inspection.

3.1.10 The Operating Company shall monitor its performance in relation to the response and any Defect repair required in relation to Hazard Notices and Observations Resulting from Inspection and provide the Director with monthly reports.

3.2 Hazard Notices

3.2.1 If the hazardous situation shall be related to traffic management the following shall apply

(i) if the Operating Company shall be responsible for the Operations or Works an oral report may be given by the Performance Audit Group to personnel on Site and to the Operating Company at the Central Office or

(ii) if the Operating Company shall be not directly responsible for the traffic management an oral report shall be made to the Operating Company at the Central Office.

3.2.2 In the case of any hazard other than those referred to in paragraph 3.2.1 of this Part 1 of this Schedule 7 an oral report shall be made to the Central Office.

3.2.3 A Hazard Notice giving written confirmation of the hazard shall be issued by the Performance Audit Group on the same day as the hazard shall have been observed.

This shall be sent by e-mail direct to the Operating Company and copied simultaneously to the Director by e-mail.

3.2.4 Each Hazard Notice shall be given a unique reference number.

3.2.5 Each Hazard Notice shall include details of the hazard and the time when the oral report was given and the name of the Operating Company's member of staff to whom the hazard was reported.

3.2.6 Where possible a photograph of the hazard in Electronic Copy shall be sent with each Hazard Notice.

3.2.7 The Operating Company shall reply to the Performance Audit Group by telephone call confirmed in writing or e-mail within 24 hours of the oral report being issued. The reply shall give details of the actions taken by the Operating Company to deal with the hazard. The Operating Company shall copy the reply to the Director.

3.3 Observations Resulting From Inspection

3.3.1 Observations Resulting from Inspections may be issued if the following or other circumstances shall be identified

(i) poor maintenance

(ii) poor workmanship or any other Contract non-compliance

(iii) Category 1 Defects

(iv) significant Category 2 Defects

(v) events including but not limited to

(a) unexpected road closures

(b) unusual traffic congestion and

(c) the like.

3.3.2 When the Operating Company has received an Observation Resulting from Inspection the Operating Company shall reply direct to the Performance Audit Group by e-mail in the timescale referred to in the Observation Resulting from Inspection with its proposals.

The Operating Company shall copy this reply to the Director.

3.3.3 The time for reply by the Operating Company shall generally be referred to as 7 days although this time may vary depending on the nature of the Observation Resulting from Inspection.

3.3.4 Such time for reply shall not be related to the time taken for action by the Operating Company in dealing with an Observation Resulting from Inspection.

The reply shall be in writing or by e-mail showing the Operating Company's intended actions or reasons for no action.

In some instances it may be appropriate for the reply to state that the issue shall be dealt with at a future date as part of the maintenance programme.

The Operating Company shall be under no obligation to execute Operations to any deadline other than those referred to in this Contract.

4 INSPECTION AND CYCLIC MAINTENANCE REQUIREMENTS

4.1 Carriageway

4.1.1 General

4.1.1.1 The requirements as referred to in paragraphs 4.1.1.1 to 4.1.3.1 of this Part 1 of this Schedule 7 relate to the surface of carriageways, hardshoulders, crossovers, laybys, central islands and central reserves.

4.1.1.2 These requirements do not include the replacement or renewal of those parts of the Trunk Road with the Unit which have become unserviceable and which require structural pavement maintenance Operations including but not limited to surface dressing.

4.1.1.3 The carriageway includes hardstrips and hardshoulders provided on some carriageways outwith the edge marking.

4.1.2 Detailed Inspections

4.1.2.1 Detailed Inspections of carriageways shall be carried out by the Operating Company in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively.

4.1.2.2 Inspections shall assist to identify the requirement to bring forward any structural pavement condition surveys.

The Operating Company shall report in writing to the Director any locations on the Trunk Road where it considers that a structural pavement condition survey may be required.

The Operating Company shall subject to an Order carry out a structural pavement condition survey.

4.1.3 Cyclic Maintenance

4.1.3.1 Cyclic Maintenance of carriageways shall include but not be limited to weed control in accordance with Clause 3002 of the Specification.

4.2 Pedestrian and Cycle Facilities

4.2.1 General

4.2.1.1 The requirements as referred to in paragraphs 4.2.1.1 to 4.2.3.1 inclusive of this Part 1 of this Schedule 7 relate to pedestrian and cycle facilities.

4.2.1.2 Pedestrian facilities shall include paved areas for pedestrians usually within the Trunk Road boundary.

4.2.1.3 Cycle facilities shall include paved areas for persons with pedal cycles with or without a pedestrian facility.

4.2.1.4 Inspections shall identify the requirement to bring forward any structural condition surveys.

The Operating Company shall report in writing to the Director any locations where it considers that a structural pavement condition survey shall be required.

The Operating Company shall subject to an Order carry out a structural condition survey.

4.2.2 Detailed Inspections

4.2.2.1 Detailed Inspections in accordance with paragraphs 1.7.2 and 1.7.3 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively shall not apply for pedestrian and cycle facilities.

4.2.2.2 Annex 7.2/D of Part 2 of this Schedule 7 defines categories for pedestrian and cycle facilities.

Detailed Inspections of pedestrian and cycle facilities shall be carried out at the following frequencies

(i) Category A areas shall be inspected at intervals not exceeding 1 month

(ii) Category B areas shall be inspected at intervals not exceeding 3 months and

(iii) all other areas shall be inspected at intervals at least once during each Annual Period.

4.2.3 Cyclic Maintenance

4.2.3.1 Cyclic Maintenance of pedestrian and cycle facilities shall include but not be limited to weed control in accordance with Clause 3002 of the Specification.

4.3 Covers, Gratings and Frames

4.3.1 General

4.3.1.1 The requirements as referred to in paragraphs 4.3.1.1 to 4.3.3.1 inclusive of this Part 1 of this Schedule 7 relate to covers gratings and frames.

4.3.1.2 Many covers gratings and frames in carriageways footways and cycle facilities shall be the responsibility of Undertakers and other parties.

4.3.1.3 The NRSWA requires an Undertaker to maintain its apparatus in the street to the reasonable satisfaction of the roads authority.

4.3.1.4 Where an Inspection or Safety Patrol by the Operating Company shall identify a cover grating or frame with a Category 1 Defect it shall be made safe by the Operating Company in accordance with paragraphs 2.2.1 to 2.2.4 inclusive of this Part 1 of this Schedule 7.

4.3.1.5 Where the cover grating or frame shall be the property of an Undertaker or third party the Operating Company shall at the same time give notice to the Undertaker or third party to carry out permanent repairs within a period equal to that in which the Operating Company would be required to complete similar repairs.

4.3.1.6 Records of Category 1 Defects of Undertakers' covers gratings and frames and of actions taken by the Operating Company shall be entered into the Routine Maintenance and Management System.

The Category 1 Defects shall remain recorded as unrepaired in the Routine Maintenance and Management System until the Operating Company shall witness that a permanent repair shall have been completed.

The performance of the Undertakers shall be monitored by the Operating Company using the Routine Maintenance and Management System and reported to the Director within 4 weeks of the end of each Annual Period.

4.3.2 Detailed Inspections

4.3.2.1 Detailed Inspections of covers, gratings and frames shall be carried out by the Operating Company in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively.

4.3.3 Cyclic Maintenance

4.3.3.1 Cyclic Maintenance of covers, gratings and frames shall include but not be limited to weed control in accordance with Clause 3002 of the Specification.

4.4 Kerbs and Edgings

4.4.1 General

4.4.1.1 The requirements as referred to in paragraphs 4.4.1.1 to 4.4.3.1 inclusive of this Part 1 of this Schedule 7 relate to all types of kerbs, channels, edgings quadrants and the like.

4.4.2 Detailed Inspections

4.4.2.1 Detailed Inspections of kerbs and edgings shall be carried out by the Operating Company in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively.

4.4.3 Cyclic Maintenance

4.4.3.1 Cyclic Maintenance of kerbs and edgings shall include but not be limited to weed control in accordance with Clause 3002 of the Specification.

4.5 Linear Drainage Systems

4.5.1 General

4.5.1.1 The requirements as referred to in paragraphs 4.5.1.1 to 4.5.3.2 inclusive of this Part 1 of this Schedule 7 relate to linear drainage systems.

Linear drainage systems shall include but not be limited to

(i) piped drains

(ii) combined drainage and kerb systems

(iii) feeder pipes

(iv) linear drainage channel systems

(v) kerb or channel offlet pipes, channels through chambers and

(vi) piped grips covered by the Series 500 of the Specification.

4.5.1.2 Piped grips shall be defined as short lengths of pipe carrying water from a road channel across the verge direct to a ditch, linear drainage system or chamber.

4.5.1.3 Piped grips shall often be located at known sensitive drainage points and therefore shall require regular attention by the Operating Company. The connecting pipe shall often be laid close to the surface and shall therefore be prone to damage which may in turn result in blockage.

4.5.1.4 The Operating Company shall identify parts of linear drainage systems that regularly do not operate satisfactorily and a report with proposals for investigation or action shall be submitted in writing to the Director within 14 days of such identification.

4.5.1.5 Where there shall be evidence of flooding, blockage or some other fault identified from

(i) inspections

(ii) Safety Patrols

(iii) reports from the emergency services or the public or

(iv) complaints received from other sources

the Operating Company shall submit a report to the Director within 14 days of such identification indicating the cause of the problem.

In the event that the Operating Company shall be unable to clear any localised blockage within linear drainage systems excluding but not limited to combined drainage and kerb systems and linear drainage channel systems by rodding or drawing through a mandrel the Operating Company shall submit a report with proposals in writing to the Director within 14 days with recommendations for further action to resolve the problem.

4.5.2 Detailed Inspections

4.5.2.1 Detailed Inspections of linear drainage systems shall be carried out by the Operating Company in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively.

4.5.2.2 Detailed Inspections shall be external and carried out from each end of each section of each length of the linear drainage system to determine general structural condition and signs of silting or blockage.

4.5.2.3 Where possible, use shall be made of gully, catchpit and interceptor emptying and cleansing Operations and inspection procedures to verify that linear drainage systems shall be operating satisfactorily.

4.5.2.4 The Operating Company shall determine the ownership of linear drainage systems outwith the Unit before any work shall be carried out.

4.5.3 Cyclic Maintenance

4.5.3.1 Maintenance in accordance with Clause 6104 of the Specification shall be carried out on all linear drainage systems when blockages or major reductions in capacity shall be detected.

4.5.3.2 The Operating Company shall during each Annual Period pressure jet with clean water all slot drains and kerb block drains once per year to remove any silt and ensure free flow.

All debris lodged in the slots or block holes shall be removed at this time.

4.6 Gullies, Catchpits, Soakaways and Oil Separators

4.6.1 General

4.6.1.1 The requirements as referred to in paragraphs 4.6.1.1 to 4.6.3.1 inclusive of this Part 1 of this Schedule 7 relate to gullies catchpits soakaways and oil separators.

4.6.2 Detailed Inspections

4.6.2.1 Detailed Inspections of gullies catchpits soakaways and oil separators shall be carried out by the Operating Company in accordance with paragraphs 1.7.3 and 1.7.4 at intervals of 1 and 2 years respectively

4.6.3 Cyclic Maintenance

4.6.3.1 Cyclic Maintenance shall be carried out in accordance with Clause 6102 of the Specification at frequencies as required by that Clause and in any case not less than once in each Annual Period.

4.7 Drainage Grips

4.7.1 General

4.7.1.1 The requirements as referred to in paragraphs 4.7.1.1 to 4.7.3.1 inclusive of this Part 1 of this Schedule 7 shall relate to drainage grips defined as open channels cut across verges and leading to ditches or linear drainage systems.

4.7.2 Detailed Inspections

4.7.2.1 Detailed Inspections of drainage grips shall be carried out by the Operating Company in accordance with paragraphs 1.7.3 and 1.7.4 at intervals of 1 and 2 years respectively.

4.7.3 Cyclic Maintenance

4.7.3.1 Cyclic Maintenance shall be carried out in accordance with Clause 6103 of the Specification at frequencies as required by that Clause and in any case not less than once in each Annual Period and as required when blockages occur.

4.8 Ditches

4.8.1 General

4.8.1.1 The requirements as referred to in paragraphs 4.8.1.1 to 4.8.3.1 inclusive of this Part 1 of this Schedule 7 relate to ditches.

4.8.1.2 If not properly monitored ditches can

(i) become overgrown with vegetation

(ii) become silted up

(iii) become blocked with debris and rubbish and

(iv) suffer bank erosion to the extent that the flow becomes impeded.

These undesirable effects shall be prevented by the Operating Company. Water in ditches shall not in itself be normally harmful unless stagnation occurs with the resultant health hazards, flooding shall be caused or a resultant higher water table adversely affects Trunk Road, their foundations or those of Structures.

Defective ditches can also cause a nuisance to adjacent land users.

4.8.2 Detailed Inspections

4.8.2.1 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 at intervals of 1 and 2 years respectively shall not apply for ditches.

4.8.2.2 The Operating Company shall carry out Detailed Inspections of ditches at intervals not exceeding 5 years.

4.8.3 Cyclic Maintenance

4.8.3.1 There shall be no Cyclic Maintenance requirement for ditches.

4.9 Filter Material

4.9.1 General

4.9.1.1 The requirements as referred to in paragraphs 4.9.1.1 to 4.9.3.1 inclusive of this Part 1 of this Schedule 7 relate to filter material associated with drains and soakaways which may incorporate a properly formed invert or collection pipe.

4.9.1.2 These paragraphs 4.9.1.1 to 4.9.3.1 inclusive of this Part 1 of this Schedule 7 shall not apply to pipes associated with filter drains or chambers associated with soakaways to which paragraphs 4.5.1.1 to 4.5.3.2 inclusive and 4.6.1.1 to 4.6.3.1 inclusive respectively of this Part 1 of this Schedule 7 apply.

4.9.1.3 Filter drains and soakaways act as a drain for surface water run-off from carriageways, hardshoulders, verges, cutting and embankment slopes and adjacent land.

Separately or in combination they also control the ground water level below Trunk Road Structures adjacent verges and land outside the Trunk Road boundary.

4.9.1.4 The efficiency of filter drains can be impaired by the formation of a silt crust at the top of the filter material with attendant vegetation growth or by the accumulation of trapped silt in the lower layers.

Each Defect can occur with or without the other.

The surface Defect can be detected by inspection at ground level but the deeper accumulations can only be confirmed by excavation usually by means of trial pits.

Ponding at the surface may occur if Defects shall be present where the filter drain or soakaway performs the dual role of surface and sub-surface water collection.

If there shall be no obvious surface Defect ponding may indicate silt in the lower layer.

If the Operating Company shall consider that further investigation including trial pits is required it shall submit a report within 28 days of identification of the problem with recommendations to the Director.

Any further action shall be subject to an Order.

4.9.1.5 Schemes for replacement of filter material shall be submitted by the Operating Company as a Bid in accordance with Part 1 of Schedule 4.

4.9.2 Detailed Inspections

4.9.2.1 Detailed Inspections of filter material shall be carried out by the Operating Company in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively

4.9.3 Cyclic Maintenance

4.9.3.1 Cyclic Maintenance shall be carried out in accordance with Clause 6105 of the Specification at the following minimum frequencies

(i) 3 years in verges and central reserves and

(ii) 5 years in areas remote from the carriageway.

4.9.3.2 Cyclic maintenance of filter material shall include but not be limited to weed control in accordance with Clause 3002 of the Specification.

4.10 Drainage Structures

4.10.1 General

4.10.1.1 The requirements as referred to in paragraphs 4.10.1.1 to 4.10.3.1 inclusive of this Part 1 of this Schedule 7 relate to drainage Structures.

4.10.1.2 Drainage structures shall include box culverts and drainage Structures other than Structures and other than linear drainage systems as referred to in paragraphs 4.5.1.1 to 4.5.3.2 inclusive of this Part 1 of this Schedule 7.

4.10.1.3 Many drainage structures can tolerate some silting and vegetation growth before efficiency shall be impaired to the point where they shall be cleared.

Fittings across the ends of some culverts are however particularly prone to blockage restricting the free flow of water through the culvert.

4.10.2 Detailed Inspections

4.10.2.1 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively shall not apply to drainage structures.

4.10.2.2 The Operating Company shall carry out a Detailed Inspection of every drainage Structure every 12 months in the Spring or the Autumn.

4.10.3 Cyclic Maintenance

4.10.3.1 Cyclic Maintenance shall be carried out in accordance with Clause 6106 of the Specification as required either during the Detailed Inspection or within 28 days of the Detailed Inspection or at such other times as may be required when blockages or major reductions in capacity shall be detected.

4.11 Balancing Ponds

4.11.1 General

4.11.1.1 The requirements as referred to in paragraphs 4.11.1.1 to 4.11.3.1 inclusive of this Part 1 of this Schedule 7 relate to balancing ponds.

These requirements exclude any associated feeder pipes or ditches as referred to in paragraphs 4.5.1.1 to 4.5.3.2 inclusive and 4.8.1.1 to 4.8.3.1 inclusive of this Part 1 of this Schedule 7.

4.11.1.2 Balancing ponds and associated feeder pipes or ditches shall be provided for flood control and anti-pollution purposes.

4.11.1.3 The Operating Company shall pay particular attention to the following possible faults and safety aspects.

Typical Defects that shall be categorised shall include but not be limited to

(i) silting in the pond causing a loss of storage capacity

(ii) damage or erosion to the pond banks walls or bunds

(iii) damage or obstruction to the pond outlet which will affect the controlled rate of discharge and

(iv) safety aspects including but not limited to the maintenance of fences to prevent the public gaining access.

4.11.1.4 Balancing ponds may become important sites for nature conservation.

Prior to commencing any maintenance of a balancing pond the Director shall be consulted by the Operating Company to ascertain whether specialist environmental advice shall be required.

4.11.1.5 Balancing ponds may sometimes be situated some distance from Trunk Roads.

4.11.2 Detailed Inspections

4.11.2.1 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively shall not apply to balancing ponds.

4.11.2.2 The Operating Company shall carry out Detailed Inspections of balancing ponds at intervals not exceeding 6 months.

4.11.3 Cyclic Maintenance

4.11.3.1 There shall be no Cyclic Maintenance requirement for balancing ponds.

4.12 Ancillary Drainage Items

4.12.1 General

4.12.1.1 The requirements as referred to in paragraphs 4.12.1.1 to 4.12.3.1 inclusive of this Part 1 of this Schedule 7 relate to ancillary drainage items.

Ancillary drainage items associated with linear drainage systems and drainage structures shall include but not be limited to

(i) headwalls

(ii) aprons

(iii) spillways

(iv) trash screens

(v) watergates

(vi) grilles

(vii) sluices

(viii) tidal flaps

(ix) penstocks

(x) valves

(xi) pumps and

(xii) other specialist equipment.

4.12.2 Detailed Inspections

4.12.2.1 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of not less than 1 year shall not apply to ancillary drainage items.

4.12.2.2 The Operating Company shall carry out Detailed Inspections of headwalls, aprons and spillways at intervals not exceeding 1 year.

4.12.2.3 The Operating Company shall carry out Detailed Inspections of trash screens, watergates and grilles at 6 monthly intervals during the Spring and the Autumn of each year.

4.12.2.4 The Operating Company shall carry out Detailed Inspection of sluices, tidal flaps, penstocks, valves pumps and other specialised equipment at intervals not exceeding 6 months or in accordance with the manufacturers' written recommendations or instructions if these shall be more frequent.

4.12.3 Cyclic Maintenance

4.12.3.1 Cyclic Maintenance shall be carried out in accordance with Clause 6107 of the Specification either during the Detailed Inspection or within 28 days of the Detailed Inspection.

4.13 Communication and Miscellaneous Equipment

4.13.1 General

4.13.1.1 The requirements as referred to in paragraphs 4.13.1.1 to 4.13.3.1 inclusive of this Part 1 of this Schedule 7 relate to communications and miscellaneous equipment.

Communications and miscellaneous equipment includes but is not limited to

(i) emergency telephones

(ii) hazard warning signals

(iii) matrix signals

(iv) variable message signs

(v) equipment cabinets

(vi) closed circuit television cameras and

(vii) speed cameras.

4.13.1.2 Maintenance of communications and miscellaneous equipment shall be undertaken by authorised contractors under separate contracts which shall be managed directly by the Director and which shall be outwith the scope of this Contract.

The Operating Company shall not interfere with any equipment inside cabinets.

4.13.1.3 If the Operating Company shall discover any problems with the communications and miscellaneous equipment these problems shall be reported to the NADICS operator within 24 hours.

4.13.2 Detailed Inspections

4.13.2.1 There shall be no Detailed Inspections requirement for communications and miscellaneous requirements.

4.13.3 Cyclic Maintenance

4.13.3.1 There shall be no Cyclic Maintenance requirement for communications and miscellaneous equipment.

4.14 Geotechnical Assets

4.14.1 General

4.14.1.1 The requirements as referred to in paragraphs 4.14.1.1 to 4.14.3.1 inclusive of this Part 1 of this Schedule 7 relate to geotechnical assets as defined in paragraph 1.6 of HD 41 of the DMRB.

4.14.1.2 The Operating Company shall perform the functions of the managing agent as specified in HD 41 of the DMRB.

4.14.1.3 Geotechnical assets may be in the ownership of the adjacent land owner and if so it shall legally be the landowner's responsibility to maintain the stability of the assets from adversely affecting the Trunk Road within the Unit. The Operating Company shall inform in writing any adjacent landowner of any potential geotechnical problems on his land which could affect the Trunk Road within the Unit and liaise with the landowner regarding the necessary remedial action.

The Operating Company shall notify in writing the Director of any recommendations and of any failure of the landowner in fulfilling his responsibility.

4.14.2 Detailed Inspections

4.14.2.1 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively shall not apply to geotechnical assets.

4.14.2.2 Detailed Inspections of geotechnical assets shall be carried out by the Operating Company at intervals not more than 1 year in accordance with paragraphs 2.10 and 2.11 of HD 41 of the DMRB.

4.14.2.3 The Director may require the Operating Company to monitor earthworks in specific areas within the Unit.

These areas shall be as referred to in Annex 7.1/F to this Part 1 of this Schedule 7.

Such monitoring shall be subject of an Order.

4.14.3 Cyclic Maintenance

4.14.3.1 There shall be no Cyclic Maintenance requirement for geotechnical assets.

4.15 Grass, Bulbs and Wildflower Areas

4.15.1 General

4.15.1.1 The requirements as referred to in paragraphs 4.15.1.1 to 4.15.3.1 inclusive of this Part 1 of this Schedule 7 relate to grass, bulbs and wildflower areas as detailed in the Landscape Inventory Drawings which shall include but not be limited to verges, central reserves, cuttings and embankments.

4.15.1.2 The Operating Company shall submit a grass cutting programme to the litter authority 90 days prior to the start of each Annual Period and also 1 month prior to grass cutting Operations.

This shall be to enable the litter authority to co-ordinate litter picking operations prior to grass cutting operations.

4.15.2 Detailed Inspections

4.15.2.1 Detailed Inspections of grass, bulbs and wildflower areas shall be carried out by the Operating Company in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively.

4.15.2.2 Detailed Inspections of bulbs and wildflower areas shall be carried out during their growing season.

4.15.3 Cyclic Maintenance

4.15.3.1 Cyclic Maintenance of grass, bulbs and wildflower areas shall be carried out in accordance with and at the frequencies referred to in Clause 3007 of the Specification.

4.15.3.2 Cyclic Maintenance of grass, bulbs and wildflower areas shall include but not be limited to weed control in accordance with Clause 3002 of the Specification.

4.16 Established Trees and Shrubs

4.16.1 General

4.16.1.1 The requirements as referred to in paragraphs 4.16.1.1 to 4.16.3.1 inclusive of this Part 1 of this Schedule 7 relate to established

(i) trees

(ii) shrubs

(iii) hedges and

(iv) scrub

listed in the Landscape Inventory Drawings.

4.16.2 Detailed Inspections

4.16.2.1 Detailed Inspections of established trees and shrubs shall be carried out by the Operating Company in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively.

4.16.3 Cyclic Maintenance

4.16.3.1 Cyclic Maintenance of established trees and shrubs shall be carried out in accordance with and at the frequencies as referred to in Clause 3010 of the Specification.

4.17 Waterbodies

4.17.1 General

4.17.1.1 These paragraphs 4.17.1.1 to 4.17.3.2 inclusive of this Part 1 of this Schedule 7 relate to the inspection of waterbodies which shall include but shall not be limited to

(i) lagoons

(ii) balancing ponds

(iii) attenuation structures and the like and

(iv) associated inlets outlets reedbeds and marginal plants.

4.17.2 Detailed Inspections

4.17.2.1 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively shall not apply to waterbodies.

4.17.2.2 Detailed Inspections of inlets outlets reedbeds and marginal plants shall be carried out twice per year in February and October of each Annual Period.

4.17.2.3 Detailed Inspections to determine the depth of silt within waterbodies shall be carried out once per year in April of each Annual Period and reported to the Director within 4 weeks of the Detailed Inspection.

4.17.3 Cyclic Maintenance

4.17.3.1 There is no Cyclic Maintenance requirement.

4.17.3.2 Any Maintenance Operations required shall be the subject of an Order.

4.18 Special Ecological Measures

4.18.1 General

4.18.1.1 The requirements as referred to in paragraphs 4.18.1.1 to 4.18.3.1 inclusive of this Part 1 of this Schedule 7 relate to special ecological measures as referred to in Clause 3012 of the Specification.

4.18.2 Detailed Inspections

4.18.2.1 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively shall not apply to special ecological measures.

4.18.2.2 Detailed Inspections of all fencing tunnels underpasses and all other provisions for wildlife shall be undertaken in October and February of each Annual Period.

4.18.3 Cyclic Maintenance

4.18.3.1 Cyclic Maintenance of special ecological measures shall be in accordance with Clause 3012 of the Specification at frequencies as required by such Clause.

4.19 Litter and Refuse

4.19.1 General

4.19.1.1 The requirements as referred to in paragraphs 4.19.1.1 to 4.19.3.1 inclusive of this Part 1 of this Schedule 7 relate to the Scottish Ministers' duty under Sections 89(1) and (2) of the Environmental Protection Act 1990 to keep motorways and special roads clear of litter and refuse and to keep motorways and special roads clean.

In carrying out this duty the Operating Company shall comply with the Code of Practice on Litter and Refuse.

Motorways and special roads shall be as identified in Annex 3.2/A to Part 2 of Schedule 3.

4.19.1.2 For the purpose of this Contract any reference to grassed areas in the Code of Practice for Litter and Refuse shall include all areas of Trunk Roads within the Unit other than hard surfaced areas.

4.19.1.3 On Trunk Roads within the Unit other than motorways and special roads the local authority shall be responsible for compliance with Sections 89(1) and (2) of the Environmental Protection Act 1990 to keep such roads clear of litter and refuse and keep roads clean.

However

(i) the Environmental Protection Act 1990 does not remove the responsibility of the Director to keep all Trunk Roads within the Unit safe for the travelling public.

(ii) Any litter or refuse that becomes a Category 1 Defect on the Unit shall be made safe by the Operating Company in accordance with paragraphs 2.2.1 to 2.2.4 inclusive of this Part 1 of this Schedule 7 and

(iii) the Operating Company shall notify in writing the local authority with a copy to the Director if the standard of cleanliness shall have fallen below that required by the Code of Practice for Litter and Refuse.

(iv) Where a local authority does not carry out its statutory duty the Operating Company shall provide a detailed report to the Director.

4.19.2 Detailed Inspections

4.19.2.1 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively shall not apply to litter and refuse.

4.19.2.2 Detailed Inspections shall be determined by the Operating Company.

The Operating Company's Quality Management System including the Quality Plan shall document how it shall comply with the requirements as referred to in paragraphs 4.19.1.1 to 4.19.3.1 inclusive of this Part 1 of this Schedule 7 and in Clause 6108 of the Specification.

4.19.3 Cyclic Maintenance

4.19.3.1 Cyclic Maintenance in respect of litter and refuse shall be in accordance with Clause 6108 of the Specification at frequencies as required within such Clause.

4.20 Removal of Dead Animals

4.20.1 General

4.20.1.1 The requirements as referred to in paragraphs 4.20.1.1 to 4.20.3.1 inclusive of this Part 1 of this Schedule 7 relate to the removal of dead animals.

4.20.1.2 The Operating Company shall comply with the requirements of Clause 6109 of the Specification.

4.20.1.3 Dead animals which could cause a risk to health or to the environment shall be treated as Category 1 Defects.

4.20.1.4 If the animal shall be a domestic pet any identification tags shall be removed and delivered to the police together with a brief description of the animal.

4.20.1.5 The Operating Company shall attempt to contact the owner of the dead animal and shall keep the carcass of any domestic animal for a period of 2 weeks in case the owner wishes to claim back the carcass.

4.20.2 Detailed Inspections

4.20.2.1 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively shall not apply to the removal of dead animals.

4.20.2.2 There shall be no Detailed Inspection requirement for removal of dead animals.

4.20.3 Cyclic Maintenance

4.20.3.1 There shall be no Cyclic Maintenance requirement for removal of dead animals.

4.21 Vehicle Road Restraint Systems

4.21.1 General

4.21.1.1 The requirements as referred to in paragraphs 4.21.1.1 to 4.21.3.1 inclusive of this Part 1 of this Schedule 7 relate to vehicle road restraint systems including but not limited to

(i) tensioned corrugated beam safety fence

(ii) untensioned corrugated beam safety fence

(iii) open box beam safety fence

(iv) tensioned rectangular hollow section safety fence

(v) wire rope safety fence and

(vi) concrete barriers.

4.21.1.2 These requirements do not relate to vehicle parapets as defined in paragraph 4.14 of BS EN 1317-1:1998.

4.21.2 Detailed Inspections

4.21.2.1 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively shall not apply to vehicle road restraint systems.

4.21.2.2 The Operating Company shall carry out Detailed Inspections of all vehicle road restraint systems excluding concrete barriers at intervals not exceeding 2 years. The Detailed Inspection shall be carried out in accordance with the BS7669 Part 3: 1994.

The forms required to be completed in accordance with BS7669 Part 3:1994 shall be submitted by the Operating Company to the Director within 5 Working Days of the Detailed Inspection with recommendations for any further action which action shall be subject to an Order.

4.21.2.3 The Operating Company shall carry out Detailed Inspections at intervals not exceeding 2 years of all tensioning devices.

4.21.2.4 The Operating Company shall carry out Detailed Inspections at intervals not exceeding 2 years of concrete barriers in respect of height and structural condition.

4.21.3 Cyclic Maintenance

4.21.3.1 Cyclic Maintenance of vehicle road restraint systems shall comprise

(i) tensioning devices of vehicle road restraint systems shall be checked and reset to the correct torque at intervals not exceeding 2 years preferably in conjunction with the Detailed Inspection.

4.22 Pedestrian Road Restraint Systems

4.22.1 General

4.22.1.1 The requirements as referred to in paragraphs 4.22.1.1 to 4.22.3.1 inclusive of this Part 1 of this Schedule 7 relate to pedestrian road restraint systems comprising pedestrian guard railing as defined in paragraph 4.21 of BS EN 1317-1:1998.

4.22.2 Detailed Inspections

4.22.2.1 Detailed Inspections of pedestrian road restraint systems shall be carried out in accordance with paragraphs 1.7.3 and 1.7.4 at intervals of 1 and 2 years respectively.

4.22.2.2 The Detailed Inspections of pedestrian road restraint systems shall be with respect to height and structural condition.

4.22.3 Cyclic Maintenance

4.22.3.1 There shall be no Cyclic Maintenance requirement for pedestrian road restraint systems.

4.23 Fences, Walls, Screens and Noise Barriers

4.23.1 General

4.23.1.1 The requirements as referred to in paragraphs 4.23.1.1 to 4.23.3.1 of this Part 1 of this Schedule 7 relate to

(i) fences

(ii) walls

(iii) screen fences

(iv) snow fences and

(v) noise barriers

which shall be the responsibility of the Scottish Ministers.

4.23.1.2 These requirements do not relate to retaining walls which shall be Structures.

4.23.1.3 Fences walls screens and noise barriers along the boundaries of the Unit other than motorways shall generally be the responsibility of the adjoining landowner.

4.23.1.4 The Operating Company shall treat Defects in the Unit boundary fence which shall be adjacent to public open spaces in urban areas and where children could stray onto Trunk Roads as Category 1 Defects.

4.23.1.5 Walls which retain Trunk Roads shall generally be the responsibility of the Scottish Ministers. Boundary walls which retain land above Trunk Roads shall generally be the responsibility of the landowner.

4.23.2 Detailed Inspections

4.23.2.1 Detailed Inspections of

(i) fences

(ii) walls

(iii) screen fences

(iv) snow fences and

(v) noise barriers

shall be carried out by the Operating Company in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively

4.23.3 Cyclic Maintenance

4.23.3.1 There shall be no Cyclic Maintenance requirement for fences walls screens and noise barriers.

4.24 Road Markings

4.24.1 General

4.24.1.1 The requirements as referred to in paragraphs 4.24.1.1 to 4.24.3.1 inclusive of this Part 1 of this Schedule 7 relate to road markings.

4.24.2 Detailed Inspections

4.24.2.1 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively shall not apply to road markings.

4.24.2.2 The Operating Company shall carry out Detailed Inspections of road markings in accordance with the methods of Inspection and frequencies of paragraphs 2.5 to 2.9 inclusive of TD 26 of the DMRB.

4.24.2.3 As part of each Detailed Inspection the Operating Company shall summarise the findings of the road marking surveys, inspections and measurements and report in writing to the Director when submitting Bids.

4.24.3 Cyclic Maintenance

4.24.3.1 There shall be no Cyclic Maintenance requirement for road markings.

4.25 Road Studs

4.25.1 General

4.25.1.1 The requirements as referred to in paragraphs 4.25.1.1 to 4.25.4.2 inclusive of this Part 1 of this Schedule 7 relate to retro-reflective and non-reflective road studs of all types and colours.

4.25.2 Detailed Inspections

4.25.2.1 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively shall not apply to road studs.

4.25.2.2 The Operating Company shall carry out Detailed Inspections of road studs in accordance with the inspection methods and frequencies of paragraphs 3.6 to 3.11 inclusive of TD 26 of the DMRB.

4.25.2.3 Inspections for reflective conspicuity of retro-reflecting road studs carried out in accordance with paragraph 3.9 of TD 26 of the DMRB shall be made every 14 days during October to March inclusive and every 28 days during April to September inclusive of each Annual Period.

4.25.3 Cyclic Maintenance

4.25.3.1 There shall be no Cyclic Maintenance requirement for retro-reflective and non-reflective road studs.

4.25.4 Categorisation of Defects and Response Times

4.25.4.1 Categorisation of Defects and response times as contained in Section 2 of this Part 1 of this Schedule 7 shall not apply to road lighting.

4.25.4.2 Categorisation of Defects and response times for permanent repairs shall be carried out in accordance with paragraphs 3.12 to 3.15 inclusive of TD 26 of the DMRB.

4.26 Road Traffic Signs

4.26.1 General

4.26.1.1 The requirements as referred to in paragraphs 4.26.1.1 to 4.26.5.4 inclusive of this Part 1 of this Schedule 7 relate to permanent road traffic signs including but not limited to permanent bollards permanent marker posts and the painted surfaces of vehicle road restraint systems painted for road safety purposes.

4.26.1.2 The Operating Company shall maintain record drawings of illuminated signs showing electrical installation supply and distribution details.

These record drawings shall be amended by the Operating Company within 10 Working Days of any changes being effected.

4.26.2 Detailed Inspections

4.26.2.1 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively shall not apply to road traffic signs.

4.26.3 The Operating Company shall carry out

(i) Detailed Inspections of traffic signs in accordance with the types of inspection and frequencies required by paragraph 2.3 of TD 25 of the DMRB and

(ii) testing for electrical safety at frequencies required by paragraph 5.1.9 of TD 25 of DMRB.

4.26.4 Cyclic Maintenance

4.26.4.1 The Operating Company shall carry out Cyclic Maintenance in accordance with and at the frequencies as referred to in paragraph 5.1 of TD 25 of the DMRB.

4.26.5 Categorisation of Defects and Response Times

4.26.5.1 Categorisation of Defects and response times as contained in Section 2 of this Part 1 of this Schedule 7 shall not apply to road traffic signs.

4.26.5.2 Category 1 Defects for road traffic signs shall be deemed to be those categories of Defects as referred to in Chapter 3 of TD 25 of the DMRB as "Category 1" and "Category 2 (High and Medium Priority)".

4.26.5.3 Category 2 Defects for road traffic signs shall be deemed to be the category of Defect referred to in Chapter 2 of TD 25 of the DMRB as "Category 2 (Lower Priority".

4.26.5.4 Response times for completion of permanent repairs shall be as referred to in Chapter 4 of TD 25 of the DMRB. For "Category 2 (High and Medium Priority)" an urban trunk road shall be any trunk road subject to a speed limit less than the national speed limit for that type of road.

4.27 Road Traffic Signals

4.27.1 General

4.27.1.1 The requirements as referred to in paragraphs 4.27.1.1 to 4.27.4.3 inclusive of this Part 1 of this Schedule 7 relate to road traffic signals and associated equipment, Emergency vehicle stations and signalled pedestrian crossings.

4.27.1.2 Where traffic signals shall be remotely monitored by a local roads authority the maintenance and operation of the instation of such traffic signals shall remain the responsibility of the local roads authority.

The inspections and maintenance of such traffic signals shall be undertaken by the Operating Company in liaison with the local roads authority.

4.27.1.3 The Operating Company shall maintain record drawings showing

(i) installation

(ii) electrical supply and

(iii) distribution details.

Record drawings shall be amended by the Operating Company within 10 Working Days of any change.

4.27.2 Detailed Inspections

4.27.2.1 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively shall not apply to road traffic signals.

4.27.2.2 The Operating Company shall carry out Detailed Inspections in accordance with the inspection requirements and frequencies of paragraph 2.3 of TD 24 of the DMRB and the electrical safety requirements and frequencies as required by paragraph 4.2 of TD 24 of the DMRB.

4.27.2.3 Detailed Inspections shall include reviews of the traffic signal settings for control of traffic.

The Operating Company shall report the results of the reviews in writing to the Director with recommended changes not later than 28 days after the end of each Annual Period.

4.27.3 Cyclic Maintenance

4.27.3.1 The Operating Company shall carry out Cyclic Maintenance of traffic signals in accordance with Clause 1273 of the Specification as required but at the frequencies referred to in paragraph 3.1 of TD 24 of the DMRB.

4.27.4 Categorisation of Defects and Response Times

4.27.4.1 Category 1 Defects for road traffic signals shall be deemed to be those categories of Defects as referred to in Chapter 3 of TD 24 of the DMRB as "Category (1)". Category 1 Defects shall be permanently repaired within 48 hours of such Defects being reported.

4.27.4.2 Category 2 Defects for road traffic signals shall be deemed to be those categories of Defects as referred to in Chapter 3 of TD 24 of the DMRB as "Category (II)".

4.27.4.3 The Operating Company shall in addition carry out permanent repairs of Category 2 Defects in road traffic signal installations within 6 weeks of identification subject to an Order by the Director.

4.28 Road Lighting

4.28.1 General

4.28.1.1 The requirements as referred to in paragraphs 4.28.1.1 to 4.28.4.4 inclusive of this Part 1 of this Schedule 7 relate to road lighting including but not limited to

(i) catenary systems

(ii) aircraft and marine navigation lights on Structures and

(iii) high masts up to and including 20 metres including their hoists, winches and cables.

4.28.2 Detailed Inspections

4.28.2.1 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively shall not apply to road lighting.

4.28.2.2 Detailed Inspections shall be carried out by the Operating Company to include all inspections as referred to in paragraphs 2.10 to 2.18 inclusive of TD 23 of the DMRB.

4.28.3 Cyclic Maintenance

4.28.3.1 The Operating Company shall carry out Cyclic Maintenance in accordance with and at the frequencies required by paragraphs 5.4 to 5.6 inclusive and 5.8 to 5.43 inclusive of TD 23 of the DMRB and Clause 1370AR of the Specification and as required by paragraph 4.28.3.2 of this Part 1 of this Schedule 7.

4.28.3.2 Bulk lamp changes shall be carried out by the Operating Company at the intervals given in Table 4.28.3.2A to this Part 1 of this Schedule 7. This Table 4.28.3.2A replaces Tables 4 and 5 in TD 23 of DMRB

Lamp Type	Nomenclature as TD 23	Bulk Change Interval For Dusk to Dawn Operation	Bulk Change Interval For 24 Hour Per Day Operation
Low pressure Sodium High pressure Mercury High pressure fluorescent	SOX MBFU MCFE SL PL	24 months	12 months
High pressure sodium Low pressure sodium Ceramic Metal Halide	SON SON-T SOX-E CMH	36 months	18 months

Schedule 7 Part 1 Table 4.28.3.2.A – Maximum Intervals for Bulk Lamp Changes

4.28.4 Categorisation of Defects and Response Times

4.28.4.1 Categorisation of Defects and response times as contained in paragraphs 2.1.1 to 2.3.2 inclusive of this Part 1 of this Schedule 7 shall not apply to road lighting.

4.28.4.2 Category 1 Defects for road lighting shall be deemed to be those categories of Defects as referred to in Chapter 3 of TD 23 of the DMRB as "Category 1" and "Category 2 (High and Medium Priority)". In addition single lamp outages within 30 mph speed limits shall be categorised as "Category 2 (High and Medium Priority)" as described in paragraph 3.4 Table 1 and Table 2 of TD 23 of the DMRB.

4.28.4.3 Category 2 Defects for road lighting shall be deemed to be the category of Defect referred to in Chapter 3 of TD 23 of the DMRB as "Category 2 (Low priority)".

4.28.4.4 Response times for completion of permanent repairs shall be as referred to in Chapter 4 of TD 23 of the DMRB. For "Category 2 (High and Medium Priority)" an urban trunk road shall be any trunk road subject to a speed limit less than the national speed limit for that type of road.

4.29 Ice Sensors

4.29.1 General

4.29.1.1 The requirements as referred to in paragraphs 4.29.1.1 to 4.29.3.1 inclusive of this Part 1 of this Schedule 7 relate to ice sensors including but not limited to ice prediction equipment.

4.29.1.2 Any failures of ice sensors shall be classed as Category 1 Defects.

4.29.2 Detailed Inspections

4.29.2.1 The Operating Company shall carry out Detailed Inspections and calibration checks on ice sensors in accordance with the manufacturers' written recommendations twice each year during August to September and during December to February in each Annual Period.

4.29.2.2 These Detailed Inspections and calibration checks shall be carried out by a specialist firm procured by the Operating Company and consented to in writing by the Director.

Calibration and test certificates shall be held in accordance with the Operating Company's Quality Management System including the Quality Plan and shall be available to the Director at any time.

4.29.2.3 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively shall not apply to ice sensors.

4.29.3 Cyclic Maintenance

4.29.3.1 There shall be no Cyclic Maintenance requirement for ice sensors.

4.30 Arrester Beds

4.30.1 General

4.30.1.1 The requirements as referred to in paragraphs 4.30.1.1 to 4.30.3.1 inclusive of this Part 1 of this Schedule 7 relate to arrester beds.

4.30.2 Detailed Inspections

4.30.2.1 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively shall not apply to arrester beds.

4.30.2.2 The Operating Company shall carry out Detailed Inspections of arrester beds at intervals not exceeding 6 months.

4.30.2.3 As part of the Detailed Inspection the Operating Company shall prepare a report on the condition of arrester beds and the report shall be held in the Routine Maintenance and Management System.

The Operating Company's Detailed Inspection regime for the arrester beds shall be such that the inspection system identifies any deficiencies in the ability of the arrester bed effectively to stop a heavy vehicle leaving the road.

Any such deficiency shall be classed as a Category 1 Defect.

4.30.3 Cyclic Maintenance

4.30.3.1 There shall be no Cyclic Maintenance requirement for arrester beds.

4.31 Snow Poles, Snow Gates, Snow Fences and Snow and Ice Hidden Message Signs

4.31.1 General

4.31.1.1 The requirements as referred to in paragraphs 4.31.1.1 to 4.31.3.1 inclusive of this Part 1 of this Schedule 7 relate to snow poles snow gates snow fences and snow and ice hidden message signs.

4.31.2 Detailed Inspections

4.31.2.1 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively shall not apply to snow poles snow gates snow fences and snow and ice hidden message signs.

4.31.2.2 The Operating Company shall carry out Detailed Inspections of snow poles snow gates snow fences and snow and ice hidden message signs once a year during June July or August in each Annual Period.

4.31.2.3 The Operating Company shall no later than 7 August of each Annual Period deliver to the Director Bids for the repair of Category 2 Defects of snow poles, snow gates, snow fences and snow and ice hidden message signs.

Repairs of Category 2 Defects the subject of an Order shall be carried out by the Operating Company prior to the commencement of the Winter Service Period.

4.31.3 Cyclic Maintenance

4.31.3.1 There shall be no Cyclic Maintenance Requirements for snow poles snow gates, snow fences and snow and ice hidden message signs.

4.32 Traffic Control Barriers

4.32.1 General

4.32.1.1 The requirements as referred to in paragraphs 4.32.1.1 to 4.32.3.1 inclusive of this Part 1 of this Schedule 7 relate to traffic control barriers. Traffic control barriers shall include but not be limited to toll barriers and snow gates.

4.32.2 Detailed Inspections

4.32.2.1 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively shall not apply to traffic control barriers.

4.32.2.2 The Operating Company shall carry out Detailed Inspections at intervals not exceeding one year of all traffic control barriers to determine their structural condition and integrity.

4.32.2.3 Detailed Inspections of mechanically and electrically operated traffic control barriers shall be carried out at intervals not exceeding one year or in accordance with their maintenance manuals and manufacturers' instructions, whichever requires the more frequent Detailed Inspection interval.

4.32.3 Cyclic Maintenance

4.32.3.1 There shall be no Cyclic Maintenance requirement for traffic control barriers.

4.33 Removal of Graffiti

4.33.1 General

4.33.1.1 The requirements as referred to in paragraphs 4.33.1.1 to 4.33.3.1 of this Part 1 of this Schedule 7 relate to removal of graffiti including posters and encrusted deposits.

4.33.2 Detailed Inspections

4.33.2.1 Detailed Inspections in accordance with paragraphs 1.7.3 and 1.7.4 of this Part 1 of this Schedule 7 at intervals of 1 and 2 years respectively shall not apply to removal of graffiti.

4.33.2.2 Detailed Inspections shall be determined by the Operating Company. The Operating Company's Quality Management System including the Quality Plan shall document how it shall comply with the requirements of Clause 6120 of the Specification.

4.33.3 Cyclic Maintenance

4.33.3.1 Cyclic Maintenance shall be carried out in accordance with Clause 6120 of the Specification at the following frequencies

(i) all graffiti shall be removed within 28 days and

(ii) offensive graffiti which shall be

(a) racist

(b) religiously bigoted

(c) inflammatory or

(d) sexually explicit or obscene

shall be removed within 2 Working Days.

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SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 1

MANAGEMENT, INSPECTION AND CYCLIC MAINTENANCE

ANNEX 7.1/A – Additional Local Requirements

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SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 1

MANAGEMENT INSPECTION AND CYCLIC MAINTENANCE

ANNEX 7.1/A – Additional Local Requirements

Detailed Inspections

M8 Manhole Inspections – Inspections in accordance with M8 Manhole Report.

Monklands Canal – Inspections and Cyclic Maintenance to be in accordance with Monklands Canal Maintenance Manual.

SCOTTISH EXECUTIVE

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FAIRHURST

M8 MANHOLE REPORTS

Contents

1. Introduction

On 27th October 2001 a manhole cover and frame situated on the eastbound carriageway of the M8 motorway failed. The failure and repair work resulted in major disruption to the travelling public. Two days later a manhole in the same vicinity suffered a similar failure that also caused major disruption to traffic using the M8 motorway.

Following the second failure the Scottish Executive instructed Amey Highways to carry out an inspection of all the manholes on the running carriageway of the M8 motorway in the Glasgow area. The limits of the inspection were westbound from Cumbernauld road (junction 12) to Cardonald (junction 25) and eastbound from Braehead (junction 25A) to Stepps road (junction 11). The results of the inspection found 134 manholes on the running lanes (including slip roads) on this section of the M8. The condition of the manholes varied from manholes requiring repair work to manholes in a very sound condition. Repairs were immediately carried out on any defective manholes.

An inspection regime was then set up that involved each manhole being inspected every three months.

Although this inspection regime identified manholes that required proactive repairs to be carried out on them there was still the chance that due to the heavy traffic volumes on this section of motorway failure could occur between inspections. Unfortunately there were two further failures one in April and the other in early May 2002. Although Amey Highways carried out the repairs quickly there was still an impact on the travelling public.

Following the last incident a meeting was held on 7th May 2002 at Amey Highways offices at Bargeddie and attended by the Scottish Executive, Strathclyde Police and Amey Highways to discuss the way forward in minimising the likelihood of any future failures.

It was decided at the meeting that the inspection regime should be made more robust. The manholes that had the potential to cause maximum disruption should be identified and proposals drawn up to minimise or take away the potential for future failures.

2. Initial Action

a) Survey

Over the past twenty years the M8 motorway in the Glasgow area has been altered in many locations to cope with the increase of traffic. It was felt that the existing drainage record drawings could not be relied on to show a true picture of the motorway drainage system. It was agreed that a full survey should be carried out for the drainage system on the running carriageway of the M8 motorway. The survey involved plotting each manhole by a ground positioning system (gps). Entering each manhole to collect the details of depths to invert, chamber diameter, pipe details and the general condition of the interior. Details were also recorded of the manhole covers and brickwork between the roof of the manhole and manhole cover. All of this data was recorded on a database so that a history could be built up of each manhole.

b) Routine Inspections

Following a risk analysis it was decided that the high risk manholes between the Kingston Bridge and Springburn Road as well as those in the vicinity of the M8/M77 slip roads would be inspected monthly and all others would receive a three monthly visit. Repairs were identified and carried as necessary.

c) Clean

The majority of the manholes had to cleaned out to remove debris that had accumulated over the years. In several of the manholes the pipes were partially blocked by concrete spilled either at the time of construction or at a later date during some maintenance work. This concrete had to be removed by a man entering the manhole.

d) CCTV Survey

Once the manholes were cleared the efficiency of the manholes was improved and it also allowed the CCTV camera to enter the pipe. A CCTV survey was then carried out on the pipe work that runs between each manhole. Because the majority of this pipe work had not been cleaned out for a number of years the pipes had to be cleaned before the survey work could be carried out. The condition of the pipe work varied from very good to impassable due to the build up of debris. On these sections the pipes have to be cleaned from both ends to prepare for the CCTV camera. This could be time consuming and with this work only being permitted during the night off peak time it meant several revisits to complete the CCTV survey works.

Debris found in manhole E38

e) Emergency Response

An emergency response procedure was drawn up to outline the response if a manhole were to fail in the future. The procedure contains contact details for the Police and Amey Highways. It also contains traffic management layouts for each section of motorway within the Glasgow area to allow the affected area to be cordoned off as soon as possible.

Contact details are also included for the Amey Highways media group. If traffic management had to be installed in an emergency due to a manhole failure then this organisation can liase with the Scottish Executive press group to ensure that the various media organisations are informed to allow the travelling public to be made aware of any delays.

f) Alternative Systems

Alternative systems to set and support the manhole covers were investigated. Appendix 1 gives the details.

3. Ownership of Manholes

Following the inspection it was found that there were eight manholes on the carriageway that contained Statutory Undertakers apparatus. Four of the manholes contained cables (W5, W35, W37 and E35), two manholes were found to be foul sewers (E2 and E59) and another two manholes (E1 and E56) contain large diameter water pipes. The cables were found to belong to NADICS and both foul sewers and water pipes are assumed to belong to Scottish Water.

Manhole E35

A further two manholes (E54 and E66) are inspection chambers associated with the Monklands Canal and are under the control of the Roads Authority.

All other 124 manholes are surface water associated with the M8.

4. Further Action

While the action to date has significantly reduced the risk of failure the frequent inspections are expensive to carry out and the traffic management causes disruption to the traffic. It is therefore recommended that the following action be taken.

a) NADICS

The four NADICS brick manholes W5, W35, W37 and E35 are redundant. They should be filled in with dry lean concrete to within 600mm of the surface. The covers and top brickwork should be removed and reinstated with bituminous materials.

b) Foul Sewers and Water Pipes

Scottish Water have been contacted about the water inspection chambers E1 and E56 and foul sewer Manholes E2 and E59.
As yet there is no confirmation that they do belong to Scottish Water and if any alterations are possible.

c) Monklands Canal

It is considered essential to retain immediate entry to the manholes E54 and E66 associated with Monklands Canal. These manholes should be fitted with new covers fixed with a proprietary epoxy system such Saint Gabion.

d) Surface Water

Manhole W14 seems to be redundant. Once this is proved the manhole should be filled with dry lean concrete to within 600mm of the surface. The cover and top brickwork should be removed and reinstated with bituminous materials. There are no other redundant or easily moved manholes.

Consideration has been given to the desirability of there being immediate access to the remaining manholes. There are 27 manholes (W1, W13, W16, W17, W21, W28, W33, W40, W47, W49, W52, W59, E3, E5, E9, E14, E18, E23, E33, E36, E42, E44, E46, E57, E61, E65 and E70) that should be instantly accessible. Checks were made to ascertain whether it is possible to move the covers of these manholes away from the tyre tracks. The size of the manholes meant that this was not possible.
It is recommended that the covers and brickwork be removed from these manholes down to the roof slab. Where the distance from the surface to the roof slab exceeds 310mm new manhole covers should be installed using RMC Ready Raise System or similar. In other cases new covers should be installed using a proprietary epoxy system.
Of these manholes 4 are in the vicinity of the M8/M77 junction, 13 on the carriageway between the Kingston Bridge and Junction 15 and 5 on the slip roads between the Kingston Bridge and Junction 15.

It is unlikely that instant access will be needed for the other manholes. It is considered that the risk of danger or disruption to the public from flooding caused by not being able to quickly access these manholes is less than the danger or disruption from the manholes collapsing. These manholes (96 No) should be plated and surfaced over. The wearing course should be marked to show the manhole positions and records kept of the depth to the plate to allow emergency access in as short a time as possible.

5. Future Inspections

a) Retained Manholes

When manholes have been fitted with new covers they should be inspected at the end of each of the next two months followed by two quarterly and then six monthly inspections. Inspection intervals should be reassessed after two years or immediately after faults have been found in the manholes.

b) Drainage System

With a high proportion of the surface water manholes being plated over it will be imperative to ensure that the drainage system is performing well. It is recommended that a five yearly survey of the drainage system be carried out. This should make use of CCTV from accessible manholes as well as drainage rods from adjacent gullies into the plated manholes.

Any signs of faults in the drainage system such as slow running gullies or debris in the accessible manholes must be thoroughly and timeously investigated.

6. Summary

After the two manholes collapsed on the Glasgow M8 in October 2001 a full inspection of the M8 manholes was carried out. Those repairs were which identified have been carried out as has a thorough cleansing of the surface water drainage system. Inspections have continued on the most critical sections of the road on a monthly basis and elsewhere at three monthly intervals.

7. Recommendations

In order to reduce the expense and disruption caused by regular inspections it is recommended that 96 of the surface water manholes be plated, 5 redundant (4 NADICS and 1 surface water) manholes be in-filled and the remaining 33 manholes have their covers and top brickwork replaced.

Once this work has been carried out the interval of the manhole inspections could be reduced to two months for the critical section after an initial period of, for example, three further monthly inspections following repair. For the non-critical section, the frequency could perhaps be reduced to six monthly intervals, following two satisfactory three monthly inspections following repair.

Additionally the entire surface water drainage system should be thoroughly inspected every five years.

Appendix 1 Alternative Systems

As the construction process used for manhole brickwork, frames and covers has improved since the majority of the M8 manholes were installed it was decided to investigate new processes for this type of construction to see if they were suitable for use in this situation.

Two alternative systems have been installed and trials are currently being carried out to see how they perform under actual road conditions.

The first system used was the Ready Raise system supplied by RMC. This system involves replacing the brickwork between the roof slab and the manhole cover and frame with pre cast concrete sections. As this system has no vertical mortar joints compared to traditional brickwork it should offer a greater resistance to the stresses exerted by vehicles passing over it. Two manholes have this system installed in them. These were installed in Winter 2002 and are performing well to date with no further remedial being necessary

Manhole E46

Saint Gobian Ltd supplied the second system. The location chosen for this trial was the M77 on slip at the junction with the westbound carriageway of the M8. During a routine inspection it was noted that the existing manhole cover and frame was showing signs of distress. The frame and cover were removed along with the existing brickwork. New brickwork was built and bonded using Saint Gobian's polyester resin manhole bedding mortar. The frame was also bedded using the polyester resin mortar. This work was done in Spring 2002 and the installation is performing well to date.

The RMC and Saint Gobian systems have been inspected during safety surveys carried out weekly on the M8. The manholes undergo a closer examination during the regular manhole inspections currently being carried out.

Appendix 2 Manhole Proposals

Manhole Reference Number.	C/Way Type.	Manhole Type.	Priority	Proposal
W1	Ramp	Surface Water Sewer	Three	Renewed
W2	Ramp	Surface Water Sewer	Three	Plate Over
W3	Ramp	Surface Water Sewer	Three	Plate Over
W4	Ramp	Surface Water Sewer	Three	Plate Over
W5	Main C/Way	Public Utility	Two	Filled In
W6	Ramp	Surface Water Sewer	Three	Plate Over
W7	Ramp	Surface Water Sewer	Three	Plate Over
W8	Ramp	Surface Water Sewer	Three	Plate Over
W9	Ramp	Surface Water Sewer	Three	Plate Over
W10	Ramp	Surface Water Sewer	Three	Plate Over
W11	Ramp	Surface Water Sewer	Three	Plate Over
W12	Ramp	Surface Water Sewer	Three	Plate Over
W13	Ramp	Surface Water Sewer	Three	Renewed
W14	Ramp	Surface Water Sewer	Three	Filled In
W15	Ramp	Surface Water Sewer	Two	Plate Over
W16	Ramp	Surface Water Sewer	Two	Renewed
W17	Ramp	Surface Water Sewer	Two	Renewed
W18	Ramp	Surface Water Sewer	Two	Plate Over
W19	Ramp	Surface Water Sewer	Two	Plate Over
W20	Ramp	Surface Water Sewer	Two	Plate Over
W21		Surface Water Sewer	Two	Renewed
W22	Ramp	Surface Water Sewer	Three	Plate Over
W23	Ramp	Surface Water Sewer	Three	Plate Over
W24	Ramp	Surface Water Sewer	Three	Plate Over
W25	Main C/Way	Surface Water Sewer	One	Plate Over
W26	Main C/Way	Surface Water Sewer	One	Plate Over
W27	Main C/Way	Surface Water Sewer	One	Plate Over
W28	Main C/Way	Surface Water Sewer	One	Renewed
W29	Main C/Way	Surface Water Sewer	One	Plate Over
W30	Main C/Way	Surface Water Sewer	One	Plate Over
W31	Main C/Way	Surface Water Sewer	One	Plate Over
W32	Main C/Way	Surface Water Sewer	One	Plate Over
W33	Main C/Way	Surface Water Sewer	One	Renewed
W34	Main C/Way	Surface Water Sewer	One	Plate Over
W35	Main C/Way	Public Utility	One	Filled In
W36	Main C/Way	Surface Water Sewer	One	Plate Over
W37	Main C/Way	Public Utility	One	Filled In

W38	Main C/Way	Surface Water Sewer	One	Plate Over
W39	Main C/Way	Surface Water Sewer	One	Plate Over
W40	Main C/Way	Surface Water Sewer	One	Renewed
W41	p	Surface Water Sewer	Three	Plate Over
W42	Ramp	Surface Water Sewer	Three	Plate Over
W43	Ramp	Surface Water Sewer	Three	Plate Over
W44	Ramp	Surface Water Sewer	Three	Plate Over
W45	Ramp	Surface Water Sewer	Three	Plate Over
W46	Main C/Way	Surface Water Sewer	One	Plate Over
W47	Main C/Way	Surface Water Sewer	One	Renewed
W48	Main C/Way	Surface Water Sewer	One	Plate Over
W49	Main C/Way	Surface Water Sewer	One	Renewed
W50	Main C/Way	Surface Water Sewer	One	Plate Over
W51	Main C/Way	Surface Water Sewer	One	Plate Over
W52	Main C/Way	Surface Water Sewer	One	Renewed
W53	Ramp	Surface Water Sewer	One	Plate Over
W54	Ramp	Surface Water Sewer	Two	Plate Over
W55	Ramp	Surface Water Sewer	Two	Plate Over
W56	Ramp	Surface Water Sewer	Two	Plate Over
W57	Ramp	Surface Water Sewer	Three	Plate Over
W58	Ramp	Surface Water Sewer	Three	Plate Over
W59	Ramp	Surface Water Sewer	Three	Renewed
W60	Ramp	Surface Water Sewer	Three	Plate Over
W61	Ramp	Surface Water Sewer	Three	Plate Over
E1	Ramp	Unknown	Three	Renewed
E2	Ramp	Foul Sewer	Three	Renewed
E3	Main C/Way	Surface Water Sewer	Two	Renewed
E4	Main C/Way	Surface Water Sewer	Two	Plate Over
E5	Main C/Way	Surface Water Sewer	Two	Renewed
E6	Main C/Way	Surface Water Sewer	Two	Plate Over
E7	Main C/Way	Surface Water Sewer	Two	Plate Over
E8	Ramp	Surface Water Sewer	Three	Plate Over
E9	Main C/Way	Surface Water Sewer	Two	Renewed
E10	Main C/Way	Surface Water Sewer	Two	Plate Over
E11	Main C/Way	Surface Water Sewer	Two	Plate Over
E12	Main C/Way	Surface Water Sewer	Two	Plate Over
E13	Main C/Way	Surface Water Sewer	One	Plate Over
E14	Main C/Way	Surface Water Sewer	One	Renewed
E15	Main C/Way	Surface Water Sewer	One	Plate Over
E16	Main C/Way	Surface Water Sewer	One	Plate Over
E17	Main C/Way	Surface Water Sewer	One	Plate Over
E18	Main C/Way	Surface Water Sewer	One	Renewed
E19	Main C/Way	Surface Water Sewer	One	Plate Over

E20	Ramp	Surface Water Sewer	Three	Plate Over
E21	Ramp	Surface Water Sewer	Three	Plate Over
E22	Ramp	Surface Water Sewer	Three	Plate Over
E23	Ramp	Surface Water Sewer	Three	Renewed
E24	Ramp	Surface Water Sewer	Three	Plate Over
E25	Ramp	Surface Water Sewer	Three	Plate Over
E26	Ramp	Surface Water Sewer	Three	Plate Over
E27	Ramp	Surface Water Sewer	Three	Plate Over
E28	Ramp	Surface Water Sewer	Three	Plate Over
E29	Ramp	Surface Water Sewer	Three	Plate Over
E30	Ramp	Surface Water Sewer	Three	Plate Over
E31	Ramp	Surface Water Sewer	Three	Plate Over
E32	Ramp	Surface Water Sewer	Three	Plate Over
E33	Ramp	Surface Water Sewer	Three	Renewed
E34	Ramp	Surface Water Sewer	Three	Plate Over
E35	Main C/Way	Public Utility	One	Filled In
E36		Surface Water Sewer	One	Renewed
E37	Main C/Way	Surface Water Sewer	One	Plate Over
E38	Main C/Way	Surface Water Sewer	One	Plate Over
E39	Main C/Way	Surface Water Sewer	One	Plate Over
E40	Main C/Way	Surface Water Sewer	One	Plate Over
E41	Main C/Way	Surface Water Sewer	One	Plate Over
E42		Surface Water Sewer	One	Renewed
E43	Main C/Way	Surface Water Sewer	One	Plate Over
E44		Surface Water Sewer	One	Renewed
E45	Main C/Way	Surface Water Sewer	One	Plate Over
E46	Main C/Way	Surface Water Sewer	One	Renewed
E47	Main C/Way	Surface Water Sewer	One	Plate Over
E48	Main C/Way	Surface Water Sewer	One	Plate Over
E49	Ramp	Surface Water Sewer	Three	Plate Over
E50	Ramp	Surface Water Sewer	Three	Plate Over
E51	Ramp	Surface Water Sewer	Three	Plate Over
E52	Ramp	Surface Water Sewer	Three	Plate Over
E53	Main C/Way	Surface Water Sewer	One	Plate Over
E54	Main C/Way	Monklands Canal	One	Renewed
E55	Main C/Way	Surface Water Sewer	One	Plate Over
E56	Main C/Way	Access Tunnel	One	Renewed
E57	Main C/Way	Surface Water Sewer	One	Renewed
E58	Ramp	Surface Water Sewer	Three	Plate Over
E59	Ramp	Foul Sewer	Three	Renewed
E60	Ramp	Surface Water Sewer	Three	Plate Over
E61	Ramp	Surface Water Sewer	Three	Renewed
E62	Ramp	Surface Water Sewer	Three	Plate Over
E63	Ramp	Surface Water Sewer	Three	Plate Over
E64	Ramp	Surface Water Sewer	Three	Plate Over

E65	Main C/Way	Surface Water Sewer	One	Renewed
E66	Ramp	Water Valves	Three	Renewed
E67	Ramp	Surface Water Sewer	Two	Plate Over
E68	Ramp	Surface Water Sewer	Two	Plate Over
E69	Ramp	Surface Water Sewer	Two	Plate Over
E70	Ramp	Surface Water Sewer	Three	Renewed
E71	Ramp	Surface Water Sewer	Three	Plate Over
E72	Ramp	Surface Water Sewer	Three	Plate Over
E73	Ramp	Surface Water Sewer	Three	Plate Over

Key:

Priority One Manholes	Manholes Situated on the Main Carriageway within the Critical Section
Priority Two Manholes	Manholes Situated on the Main Carriageway outwith the Critical Section
Priority Three Manholes	Manholes Situated on Slip Roads

Renewed	Manhole cover, frame and brickwork are removed down to the roof slab. Where the distance from the surface to the roof slab exceeds 310mm new manhole covers are installed using RMC Ready Raise System. In all other cases new manhole covers are installed using a propriety epoxy system.
Plate Over	Manholes are plated and surface over. Two different deisgns are currently being investigated.
Filled In	Manhole Cover and Top Brickwork are removed and manhole is filled with dry lean mix concrete to within 600mm of the surface. Then reinstate carriageway with bituminous materials.

SCOTTISH EXECUTIVE

M8 MANHOLES

Plating Over Completion Report

August 2004

amey

FAIRHURST

CONTENTS

1.0 INTRODUCTION

The purpose of this report is to outline the progress of the M8 manhole plating over project from March 2004 until its conclusion this month. A revised set of inspection closures will also be outlined for the manholes that remain in the M8 carriageway.

2.0 BACKGROUND

The first M8 manholes were plated over on 2nd March 2004 on the M8 westbound between Junction 15 (Townhead) and Junction 17 (West Graham Street). The plating over programme was intended to run in tandem with the inspection regime that was already in place. During this time we mobilised to plate over between one and three manholes every other night. The number of manholes plated in any one night would depend on the closures and also on the level of excavation/reinstatement required.

3.0 PLATING OVER PROGRESS AND CONSTRAINTS

50 manholes were plated over in March (17 were also plated during a works contract on the eastbound carriageway between Charing Cross and Craighall). March was a quarterly inspection month therefore every closure for M8 manhole inspections were already in place. This allowed closures to be programmed in such a way as to allow three manholes to be plated almost every weeknight. Closures were also in place throughout the month on the westbound carriageway between Dobbies Loan and Charing Cross for asphaltic plug joint renewal over the Woodside Viaduct. This enabled 15 manholes to be plated without causing further disruption to the travelling public.

At the end of March discussions were underway to resolve the issue of diversion signing on Glasgow surface streets. At this time we were asked to carry out plating over only in closures that were necessary for manhole inspections. Unfortunately most of the manholes to be plated over in the monthly inspection closures had already been completed. Consequently only two manholes were plated over in the month of April.

During the course of May a number of conventional repairs were carried out as a result of findings during the March and April inspections. With the exception of the three manholes that were plated over, operational complexities effectively halted the plating over programme in the month of May.

Quarterly inspections again had to be carried out in June therefore were many closures that were required for inspection purposes alone. The majority of these closures contained manholes that either did not require to be plated over or had already been plated over. There were only seven manholes plated over in four closures in June.

In July 15 manholes were plated over in 8 closures. As mentioned previously, at the start of the project it was possible to plate three manholes in a night in the one or at most two closures, this proved more problematic nearing the end.

4.0 REVISED INSPECTION REGIME

The number of manholes in the main carriageway of the M8 have reduced by over 70% from 134 to 38. The number of quarterly inspections closures has dropped by 24% from 25 to 19. The number of monthly inspection closures will remain at eight. This is because, while the number of manholes to be inspected has significantly reduced, some manholes remain in most closures.

4.0 SUMMARY

Despite a recent slowdown in the programme, 94 out of a total of 96 manholes have been plated over to date. It is our intention that the remaining two will be completed on 1st September 2004. Details of completion dates for manholes plated over are included in Appendix A.

The plating over project has engaged a large amount of resources but has not significantly reduced the number of manhole inspections required. However, it is our belief that removing the manholes from the carriageway has been worthwhile because it will markedly reduce the probability of collapses and the associated chaos that has ensued in the past.

Appendix A

Plating Over of M8 Manholes – Progress Spreadsheet

Manhole Reference Number.	Date Plated	OI Number
W2	15-Mar-04	SW/36232
W3	15-Mar-04	SW/36233
W4	15-Mar-04	SW36234
W6	16-Mar-04	SW/36235
W7	16-Mar-04	SW/36236
W8	16-Mar-04	SW/36237
W9	17-Mar-04	SW/36238
W10	17-Mar-04	SW/36239
W11	17-Mar-04	SW/36240
W12	17-Mar-04	SW36241
W15	07-Jul-04	SW/42382
W18	07-Jul-04	SW/42383
W19	08-Jul-04	SW/42384
W20	08-Jul-04	SW/42385
W22		SW/42386
W23		SW/42387
W24	31-Mar-04	SW/36248
W25	02-Mar-04	SW/39786
W26	31-Mar-04	SW/36250
W27	01-Mar-04	SW/36978
W29	01-Mar-04	SW/39783
W30	05-Jul-04	SW/38454
W31	23-Mar-04	SW/38455
W32	02-Mar-04	SW/39781
W34	23-Mar-04	SW/36256
W36	05-Jul-04	SW/42389
W38	06-Jul-04	SW/42390
W39	22-Mar-04	SW/36361
W41	22-Mar-04	SW/36362
W42	04-Mar-04	SW/39779
W43	05-Mar-04	SW/39797
W44	05-Mar-04	SW/39796
W45	05-Mar-04	SW/39795

W46	23-Mar-04	SW/36367
W48	12-Mar-04	SW/36440
W50	12-Mar-04	SW/36448
W51	12-Mar-04	SW/36449
W53	17-Jun-04	SW/42392
W54	09-Jun-04	SW/42393
W55	12-Jul-04	SW/42394
W56	12-Jul-04	SW/42395
W57	29-Mar-04	SW/36455
W58	08-Mar-04	SW/36456
W60	08-Mar-04	SW/36457
W61	08-Mar-04	SW/36459
E4	18-Mar-04	SW/36460
E6	18-Mar-04	SW/36461
E7	18-Mar-04	SW/36462
E8	29-Mar-04	SW/36464
E10	29-Mar-04	SW/36465
E11	23-Jul-04	SW/42396
E12	23-Jul-04	SW/42397
E13	09-Mar-04	SW/36475
E15	10-Mar-04	SW/36476
E16	09-Mar-04	SW36249
E17	10-Mar-04	SW/36251
E19	14-Jun-04	SW/43325
E20	03-Mar-04	SW/39793
E21	03-Mar-04	SW/39797
E22	03-Mar-04	SW/39798
E24	14-Jul-04	SW/42399
E25	30-Mar-04	
E26	30-Mar-04	
E27	30-Mar-04	
E28	30-Mar-04	
E29	24-Mar-04	SW/36253
E30	24-Mar-04	SW/36254
E31	14-Jul-04	SW36255
E32	14-Jul-04	SW36363
E34	15-Jul-04	SW/38636
E37	30-Mar-04	
E38	30-Mar-04	
E39	30-Mar-04	

E40	30-Mar-04	
E41	30-Mar-04	
E43	30-Mar-04	
E45	30-Mar-04	
E47	30-Mar-04	
E48	30-Mar-04	
E49	30-Mar-04	
E50	30-Mar-04	
E51	30-Mar-04	
E52	30-Mar-04	
E53	30-Mar-04	SW/38638
E55	30-Mar-04	SW/38639
E58	30-Mar-04	SW/38640
E60	16-Jun-04	SW/42400
E62	10-Jun-04	SW/38643
E63	10-Jun-04	SW/38645
E64	10-Jun-04	SW/38646
E67	11-May-04	SW/40965
E68	11-May-04	SW/40973
E69	04-May-04	SW/40977
E71	07-Apr-04	SW/38653
E72	07-Apr-04	SW/38654
E73	04-Mar-04	SW/38655

Appendix B

Manhole Proposals (May 2003)

Manhole Reference Number.	C/Way Type.	Priority	Proposal
W1	Ramp	Three	Renewed
W2	Ramp	Three	Plate Over
W3	Ramp	Three	Plate Over
W4	Ramp	Three	Plate Over
W5	Main C/Way	Two	Filled In
W6	Ramp	Three	Plate Over
W7	Ramp	Three	Plate Over
W8	Ramp	Three	Plate Over
W9	Ramp	Three	Plate Over
W10	Ramp	Three	Plate Over
W11	Ramp	Three	Plate Over
W12	Ramp	Three	Plate Over
W13	Ramp	Three	Renewed
W14	Ramp	Three	Filled In
W15	Ramp	Two	Plate Over
W16	Ramp	Two	Renewed
W17	Ramp	Two	Renewed
W18	Ramp	Two	Plate Over
W19	Ramp	Two	Plate Over
W20	Ramp	Two	Plate Over
W21		Two	Renewed
W22	Ramp	Three	Plate Over
W23	Ramp	Three	Plate Over
W24	Ramp	Three	Plate Over
W25	Main C/Way	One	Plate Over
W26	Main C/Way	One	Plate Over
W27	Main C/Way	One	Plate Over
W28	Main C/Way	One	Renewed
W29	Main C/Way	One	Plate Over
W30	Main C/Way	One	Plate Over
W31	Main C/Way	One	Plate Over

	W32	Main C/Way	One	Plate Over
	W33	Main C/Way	One	Renewed
	W34	Main C/Way	One	Plate Over
	W35	Main C/Way	One	Filled In
	W36	Main C/Way	One	Plate Over
	W37	Main C/Way	One	Filled In
	W38	Main C/Way	One	Plate Over
	W39	Main C/Way	One	Plate Over
	W40	Main C/Way	One	Renewed
	W41	p	Three	Plate Over
	W42	Ramp	Three	Plate Over
	W43	Ramp	Three	Plate Over
	W44	Ramp	Three	Plate Over
	W45	Ramp	Three	Plate Over
	W46	Main C/Way	One	Plate Over
	W47	Main C/Way	One	Renewed
	W48	Main C/Way	One	Plate Over
	W49	Main C/Way	One	Renewed
	W50	Main C/Way	One	Plate Over
	W51	Main C/Way	One	Plate Over
	W52	Main C/Way	One	Renewed
	W53	Ramp	One	Plate Over
	W54	Ramp	Two	Plate Over
	W55	Ramp	Two	Plate Over
	W56	Ramp	Two	Plate Over
	W57	Ramp	Three	Plate Over
	W58	Ramp	Three	Plate Over
	W59	Ramp	Three	Renewed
	W60	Ramp	Three	Plate Over
	W61	Ramp	Three	Plate Over

	E1	Ramp	Three	Renewed
	E2	Ramp	Three	Renewed
	E3	Main C/Way	Two	Renewed
	E4	Main C/Way	Two	Plate Over
	E5	Main C/Way	Two	Renewed
	E6	Main C/Way	Two	Plate Over
	E7	Main C/Way	Two	Plate Over
	E8	Ramp	Three	Plate Over
	E9	Main C/Way	Two	Renewed
	E10	Main C/Way	Two	Plate Over
	E11	Main C/Way	Two	Plate Over
	E12	Main C/Way	Two	Plate Over
	E13	Main C/Way	One	Plate Over
	E14	Main C/Way	One	Renewed
	E15	Main C/Way	One	Plate Over
	E16	Main C/Way	One	Plate Over
	E17	Main C/Way	One	Plate Over
	E18	Main C/Way	One	Renewed
	E19	Main C/Way	One	Plate Over
	E20	Ramp	Three	Plate Over
	E21	Ramp	Three	Plate Over
	E22	Ramp	Three	Plate Over
	E23	Ramp	Three	Renewed
	E24	Ramp	Three	Plate Over
	E25	Ramp	Three	Plate Over
	E26	Ramp	Three	Plate Over
	E27	Ramp	Three	Plate Over
	E28	Ramp	Three	Plate Over
	E29	Ramp	Three	Plate Over
	E30	Ramp	Three	Plate Over
	E31	Ramp	Three	Plate Over
	E32	Ramp	Three	Plate Over
	E33	Ramp	Three	Renewed
	E34	Ramp	Three	Plate Over
	E35	Main C/Way	One	Filled In
	E36		One	Renewed
	E37	Main C/Way	One	Plate Over
	E38	Main C/Way	One	Plate Over
	E39	Main C/Way	One	Plate Over

	E40	Main C/Way	One	Plate Over
	E41	Main C/Way	One	Plate Over
	E42		One	Renewed
	E43	Main C/Way	One	Plate Over
	E44		One	Renewed
	E45	Main C/Way	One	Plate Over
	E46	Main C/Way	One	Renewed
	E47	Main C/Way	One	Plate Over
	E48	Main C/Way	One	Plate Over
	E49	Ramp	Three	Plate Over
	E50	Ramp	Three	Plate Over
	E51	Ramp	Three	Plate Over
	E52	Ramp	Three	Plate Over
	E53	Main C/Way	One	Plate Over
	E54	Main C/Way	One	Renewed
	E55	Main C/Way	One	Plate Over
	E56	Main C/Way	One	Renewed
	E57	Main C/Way	One	Renewed
	E58	Ramp	Three	Plate Over
	E59	Ramp	Three	Renewed
	E60	Ramp	Three	Plate Over
	E61	Ramp	Three	Renewed
	E62	Ramp	Three	Plate Over
	E63	Ramp	Three	Plate Over
	E64	Ramp	Three	Plate Over
	E65	Main C/Way	One	Renewed
	E66	Ramp	Three	Renewed
	E67	Ramp	Two	Plate Over
	E68	Ramp	Two	Plate Over
	E69	Ramp	Two	Plate Over
	E70	Ramp	Three	Renewed
	E71	Ramp	Three	Plate Over
	E72	Ramp	Three	Plate Over
	E73	Ramp	Three	Plate Over

Key:

Priority One Manholes	Manholes Situated on the Main Carriageway within the Critical Section
Priority Two Manholes	Manholes Situated on the Main Carriageway outwith the Critical Section
Priority Three Manholes	Manholes Situated on Slip Roads

Renewed	Manhole cover, frame and brickwork are removed down to the roof slab. Where the distance from the surface to the roof slab exceeds 310mm new manhole covers are installed using RMC Ready Raise System. In all other cases new manhole covers are installed using a propriety epoxy system.
Plate Over	Manholes are plated and surface over. Two different deisgns are currently being investigated.
Filled In	Manhole Cover and Top Brickwork are removed and manhole is filled with dry lean mix concrete to within 600mm of the surface. Then reinstate carriageway with bituminous materials.

SCOTTISH EXECUTIVE

M8 MANHOLES

Project Summary & Proposed Inspection Regime

January 2005

amey

FAIRHURST

CONTENTS

1.0 INTRODUCTION

This report is a history of the M8 Manhole Project. The various submitted reports are enclosed as separately referenced annexes.

Changes to the inspection regime for the manholes that remain in M8 carriageway are also proposed. These proposals take into account new manholes that have been discovered since the initial manhole report in May 2003.

2.0 BACKGROUND

The M8 Manhole project was initiated following two manhole covers and frames collapsing on the M8 Motorway close to Junction 16 in October 2001. A regular inspection regime to check the condition of the manholes was put in place pending a report being prepared recommending an overall strategy to progress the matter. This report was submitted in May 2003 and is contained as Annex A.

Out of a total of 134 manholes identified in the original report in May 2003, 96 were to be plated over, 5 filled in, 17 renewed and the remaining 16 were to have the RMC Ready Raise system installed.

The first M8 manholes were plated over on 2nd March 2004 on the M8 westbound between Junction 15 (Townhead) and Junction 17 (West Graham Street). Amey mobilised to plate over between one and three manholes every other night. The number of manholes plated in any one night would depend on the traffic management and also on the level of excavation/reinstatement required.

A summary of completion details for the plating over project is contained in Appendix A. The type of treatment to be given to the manholes remaining in the carriageway is outlined in Appendix B

Following the completion of the plating over exercise, recommended in the above strategy report, a position report advising of the completion of the "plating over exercise" was submitted in August 2004; this report is enclosed at Annex B

3.0 NEW M8 MANHOLES

Since the initial report into the M8 manholes in May 2003 nine more manholes have been discovered in the M8 carriageway. Three more have been brought into the carriageway through the realignment of the slip from the westbound M8 to the southbound M77

Some of these are out-with the previous inspection regime and require new closures to be put in place to cover the recommended inspection regime of either monthly or quarterly inspections. Others are in closures that, following the plating over project, were thought to be no longer necessary but will now have to continue.

These new manholes now form part of the existing inspection regime.

4.0 REVISED INSPECTION REGIME

In the light of the plating over project and the new manholes discovered, the number of manholes in the main carriageway of the M8 has reduced to 45. There are presently nine monthly inspection closures and 24 quarterly inspection closures.

Due to the significant number of manholes accounted for in the above "plating-over" exercise and the other remedial measures carried out, the Scottish Executive requested that Amey propose an amended Inspection Regime.

It is now envisaged that the inspections carried out monthly will drop back to quarterly. The current quarterly inspections will be carried out on a bi-annual basis. We propose to combine some closures, with the result that there will now be 6 quarterly inspection closures and 21 bi-annual inspection closures.

This report was submitted in September 2004 and is enclosed at Annex C. The September 2004 report also contains recommended Inspection and Maintenance requirements.

The current and proposed closures are outlined in Appendix C

An updated report submitted in November 2004 revised the number of closures required to carry out the proposed three monthly and bi-annual inspections by including a greater number of manholes in each closure.

The works element of the project is scheduled for completion by the end of March 2005 when the last of the manholes to be treated with the proprietary "Readyraise" system are scheduled.

5.0 INSPECTION AND MAINTENANCE REQUIREMENTS

5.1 General.

5.1.1 The requirements of this Part of the Schedule relate to the maintenance of the manholes that are located within the running lanes of the M8. The locations of the various manholes are as outlined on the plan contained at Appendix B. The frequency of inspection is annotated as either three monthly or monthly on the key.

5.1.2 An exercise has previously been carried out to plate over a number of non-strategic manholes, the locations of these are also contained on the drawings at Appendix B. These over plated manholes have also been GPS referenced.

5.2 Inspection Requirements.

5.2.1 The Operating Company shall carry out Inspections of the relevant manholes at one monthly and three monthly intervals as specified. The Inspection shall include the following; the cover and frame, the surrounding surfacing material and then with the cover removed, the integrity of the frame, the bedding material and the supporting brickwork or other such material.

5.2.2 The surface integrity of the over-plated manholes shall be covered by the Safety Inspections.

5.2.3 The Operating Company shall, at periods not exceeding 36 months carry out a CCTV survey of the sections of drainage system where manholes have been over-plated. The condition of the underside of the plates and the soundness of the shafts and chambers shall be assessed from this survey.

5.3 Maintenance Requirements.

5.3.1 All debris lodged in the drainage system shall be removed at the time of the above CCTV survey of the drainage system.

6.0 SUMMARY

The M8 manhole project has significantly reduced the overall number of manholes present in live traffic lanes while significantly reducing the potential for major disruption arising from collapse of any remaining manholes. The number of closures to inspect the remaining manholes has not reduced commensurately with the reduction in the number of manholes. Continuing maintenance and inspection of the plated over manholes must also be undertaken to ensure the efficient operation of the surface water drainage system and also to check on the integrity of the chambers and covers.

Appendix A

Plating Over of M8 Manholes – Completion Details

Manhole Reference Number.	Date Plated	OI Number
W2	15-Mar-04	SW/36232
W3	15-Mar-04	SW/36233
W4	15-Mar-04	SW36234
W6	16-Mar-04	SW/36235
W7	16-Mar-04	SW/36236
W8	16-Mar-04	SW/36237
W9	17-Mar-04	SW/36238
W10	17-Mar-04	SW/36239
W11	17-Mar-04	SW/36240
W12	17-Mar-04	SW36241
W15	07-Jul-04	SW/42382
W18	07-Jul-04	SW/42383
W19	08-Jul-04	SW/42384
W20	08-Jul-04	SW/42385
W22	01-Sep-04	SW/42386
W23	01-Sep-04	SW/42387
W24	31-Mar-04	SW/36248
W25	02-Mar-04	SW/39786
W26	31-Mar-04	SW/36250
W27	01-Mar-04	SW/36978
W29	01-Mar-04	SW/39783
W30	05-Jul-04	SW/38454
W31	23-Mar-04	SW/38455
W32	02-Mar-04	SW/39781
W34	23-Mar-04	SW/36256
W36	05-Jul-04	SW/42389
W38	06-Jul-04	SW/42390
W39	22-Mar-04	SW/36361
W41	22-Mar-04	SW/36362

Manhole Reference Number.	Date Plated	OI Number
W42	04-Mar-04	SW/39779
W43	05-Mar-04	SW/39797
W44	05-Mar-04	SW/39796
W45	05-Mar-04	SW/39795
W46	23-Mar-04	SW/36367
W48	12-Mar-04	SW/36440
W50	12-Mar-04	SW/36448
W51	12-Mar-04	SW/36449
W53	17-Jun-04	SW/42392
W54	09-Jun-04	SW/42393
W55	12-Jul-04	SW/42394
W56	12-Jul-04	SW/42395
W57	29-Mar-04	SW/36455
W58	08-Mar-04	SW/36456
W60	08-Mar-04	SW/36457
W61	08-Mar-04	SW/36459
E4	18-Mar-04	SW/36460
E6	18-Mar-04	SW/36461
E7	18-Mar-04	SW/36462
E8	29-Mar-04	SW/36464
E10	29-Mar-04	SW/36465
E11	23-Jul-04	SW/42396
E12	23-Jul-04	SW/42397
E13	09-Mar-04	SW/36475
E15	10-Mar-04	SW/36476
E16	09-Mar-04	SW36249
E17	10-Mar-04	SW/36251
E19	14-Jun-04	SW/36252
E20	03-Mar-04	SW/39793
E21	03-Mar-04	SW/39797
E22	03-Mar-04	SW/39798
E24	14-Jul-04	SW/42399

Manhole Reference Number.	Date Plated	OI Number
E25		Works Contract
E26		Works Contract
E27		Works Contract
E28		Works Contract
E29	24-Mar-04	SW/36253
E30	24-Mar-04	SW/36254
E31	14-Jul-04	SW36255
E32	14-Jul-04	SW36363
E34	15-Jul-04	SW/38636
E37		Works Contract
E38		Works Contract
E39		Works Contract
E40		Works Contract
E41		Works Contract
E43	NOT Plated (Hard Shoulder)	Works Contract
E45		Works Contract
E47		Works Contract
E48		Works Contract
E49		Works Contract
E50		Works Contract
E51		Works Contract
E52		Works Contract
E53	30-Mar-04	SW/38638
E55	30-Mar-04	SW/38639
E58	30-Mar-04	SW/38640
E60	16-Jun-04	SW/42400
E62	10-Jun-04	SW/38643
E63	10-Jun-04	SW/38645
E64	10-Jun-04	SW/38646
E67	11-May-04	SW/40965
E68	11-May-04	SW/40973
E69	04-May-04	SW/40977
E71	07-Apr-04	SW/38653
E72	07-Apr-04	SW/38654
E73	04-Mar-04	SW/38655

Appendix B

Treatment of Remaining M8 Manholes

Manholes for Repair/RMC Readyraise System

LOCATION	Manhole	Date of last repair	O.I. No.
Cumbernauld Road W/B On Ramp	W1		
Stirling Road W/B On Ramp	W13		
Dedicated Nearside Lane from Loop-U W/B On Ramp to	W16	23/03/2004	SW/28920
	W17	01/04/2004	SW/29478
Dobbies Loan W/B Off Ramp	W21	23/03/2004	SW/28922
Dobbies Loan W/B Off Ramp to Great Western Road W/B Off Ramp	W28	RMC RR	
	W33	21/05/2004	SW/39397
Dobbies Loan W/B Off Ramp to Phonix W/B On Ramp	W40	06/07/2004	SW/44082
Phonix W/B On Ramp to Anderston W/B Off Ramp	W47	10/11/2004	SW/44092
M77 S/B Off Ramp from M8 Main Carriageway W/B	W49	01/11/2004	SW/48131
M77 W/B Off Ramp to Drumbreck W/B Off Ramp	W52	05/11/2004	SW/48132
Seaward Street W/B On Ramp	W59	07/06/2004	SW/42754
Braehead E/B on Ramp	E1		
	E2		
Clyde Tunnel E/B On Ramp to Helen Street E/B Off Ramp	E3		
	E5		
umbreck E/B On Ramp to Secondary Carriageway E/B Off Ram	E9		
M77 N/B from Nithsdale Road Overbridge to M8 E/B Off Ramp	E14	02/08/2004	SW/44728
	E18	24/03/2004	SW/34885
Seaward Street E/B Off Ramp	E23	20/05/2008	SW/35582
St. Georges Road E/B Off Ramp	E33		
Charing Cross E/B On Ramp to Craighall E/B On Ramp	E36	Not Done in Works Contract	
	E42	Done in Works Contract	
	E44		
	E46	RMC RR	
Craighall E/B On Ramp to Springburn Rd E/B Off Ramp	E54	10/05/2004	SW/41774
	E56		
	E57		
Springburn Road E/B Off Ramp	E59		
Stirling Road E/B On Ramp	E61		
Springburn Road E/B Off Ramp to Stirling Road E/B On Ramp	E65	24/03/2004	SW/34884
Castle Street E/B On Ramp	E66		
Stepps Road E/B Off Ramp	E70	30/09/2004	SW/46814

RMC ready raise solution in place
Epoxy mortar solution
RMC ready raise solution to be installed

Appendix C

Inspection Closures

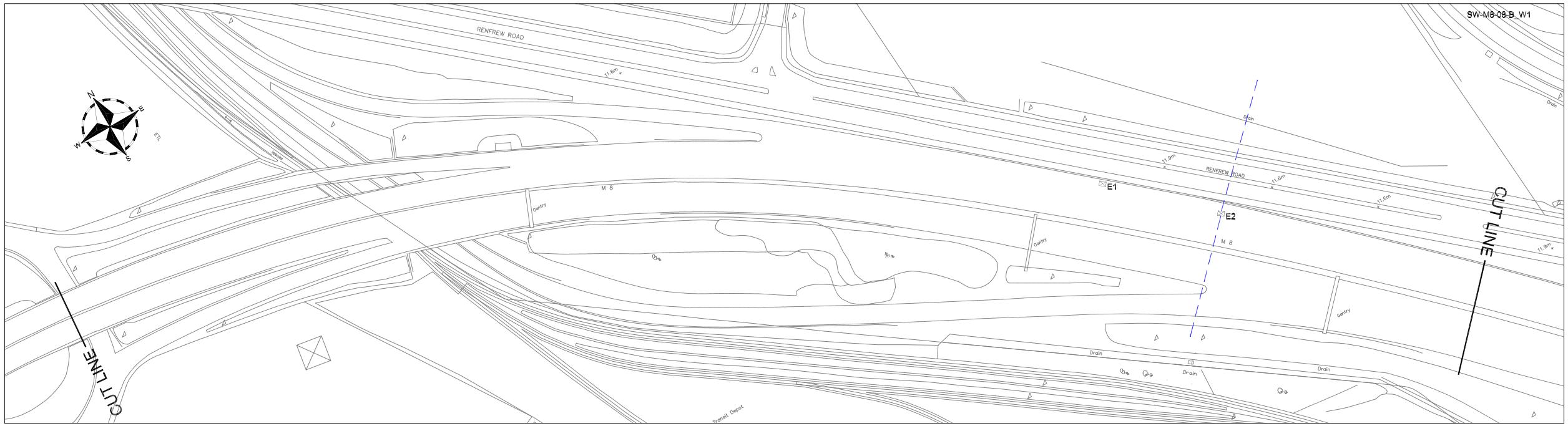
EXISTING QUARTERLY MANHOLE INSPECTION CLOSURES

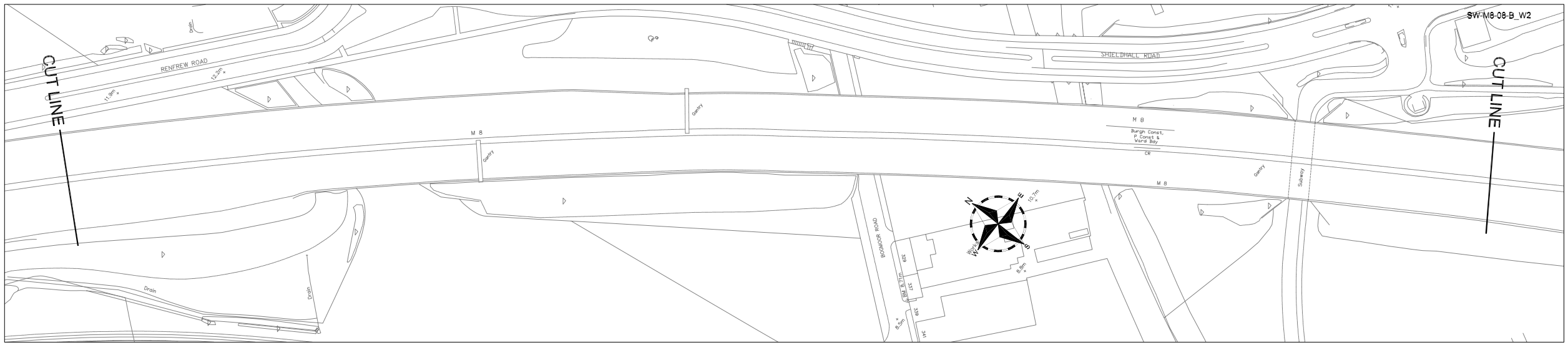
LOCATION.	RIF No.	Manhole Reference Number.	Comments
Loop-U W/B On Ramp.	RIF 4	W14	FILL IN
Dedicated Nearside Lane from Loop-U W/B On Ramp to Dobbies Loan W/B Off Ramp.		W15	PLATED OVER
		W16	
		W17	
		W18	PLATED OVER
		W19	PLATED OVER
		W20	PLATED OVER
		W21	
Dobbies Loan W/B Off Ramp.		W22	PLATED OVER
		W23	PLATED OVER
		W24	PLATED OVER
Dobbies Loan W/B Off Ramp to Great Western Road W/B Off Ramp.		W26	PLATED OVER
	RIF 5	W27	PLATED OVER
		W28	
		W29	PLATED OVER
		W30	PLATED OVER
		W31	PLATED OVER
		W33	
		W34	PLATED OVER
		W35	FILL IN
		W36	PLATED OVER
		W37	FILL IN
		W38	PLATED OVER
Great Western Road W/B Off Ramp to Phoenix W/B On Ramp.	RIF 6	W39	PLATED OVER
		W40	
Phoenix W/B On Ramp to Anderston W/B Off Ramp.	RIF 8	W46	PLATED OVER
		W47	
M77 S/B Off Ramp from M8 Main Carriageway W/B.	RIF 9	W48	PLATED OVER
		W49	
		W50	PLATED OVER
		W51	PLATED OVER
M77 W/B Off Ramp to Dumbreck W/B Off Ramp.		W52	
M77 S/B Off Ramp from M8 Main Carriageway W/B.		W53	PLATED OVER
M77 N/B from Nithsdale Road Overbridge to M8 E/B Main Carriageway.	RIF 17	E13	PLATED OVER
		E14	
		E15	PLATED OVER
		E16	PLATED OVER
		E17	PLATED OVER
		E18	
		E19	PLATED OVER

Charing X EB on to Great Western Rd EB on, offside lane	RIF 26	E28A	
		E28C	
		E28B	
Charing Cross E/B On Ramp to Craighall E/B On Ramp.	RIF 20	E35	FILLED IN
		E36	
		E37	PLATED OVER
		E38	PLATED OVER
		E39	PLATED OVER
		E40	PLATED OVER
		E41	PLATED OVER
		E42	
		E43	PLATED OVER
		E44	
		E45	PLATED OVER
		E46	
		E47	PLATED OVER
		E48	PLATED OVER
Craighall E/B On Ramp to Kirkintilloch E/B Off Ramp.	RIF 21	E53	PLATED OVER
		E54	
		E55	PLATED OVER
		E56	
		E57	
Springburn Road E/B Off Ramp.		E58	PLATED OVER
		E59	
		E60	PLATED OVER
Stirling Road E/B On Ramp.	RIF 22	E61	
		E62	PLATED OVER
		E63	PLATED OVER
		E64	PLATED OVER
Springburn Road E/B Off Ramp to Stirling Road E/B On Ramp.	RIF 21	E65	
Total Number of Closures = 9			

Appendix D

New Inspection Regime Drawings





LEGEND

- MANHOLE PLATED OVER
- MANHOLE TO BE PLATED OVER

Scale
1:1250 @ A1
1:2500 @ A3

Rev	Date	Drawn	Description	Chkd	Appvd

Client
SCOTTISH EXECUTIVE

Unit Managers

Amey Highways
Langmuir Way
Bargeddie
Glasgow tel.: 0141 781 6900
G69 7RW fax.: 0141 771 0893
FAIRHURST

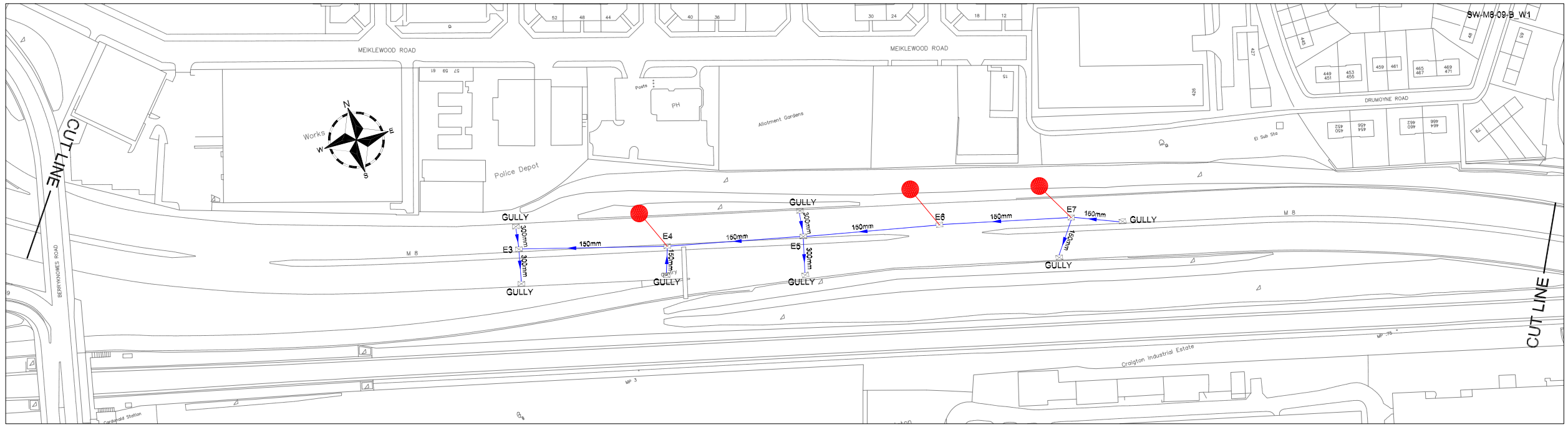
Project Title
TERM CONTRACT FOR MANAGEMENT AND MAINTENANCE OF THE SCOTTISH TRUNK ROAD NETWORK
SOUTH WEST TRUNK ROAD UNIT

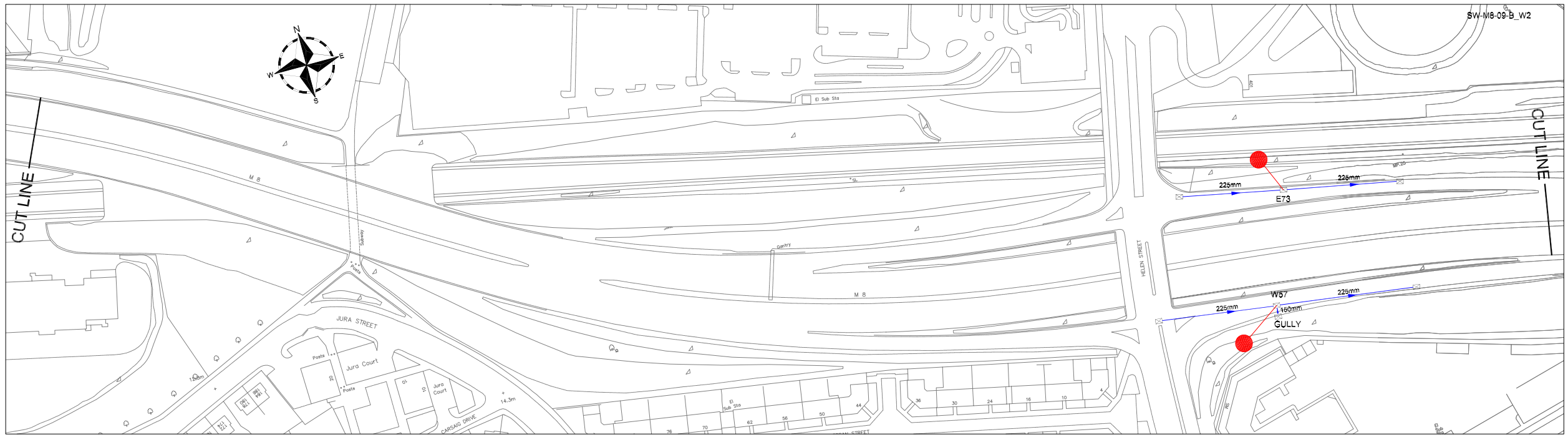
Drawing Title
M8 MOTORWAY

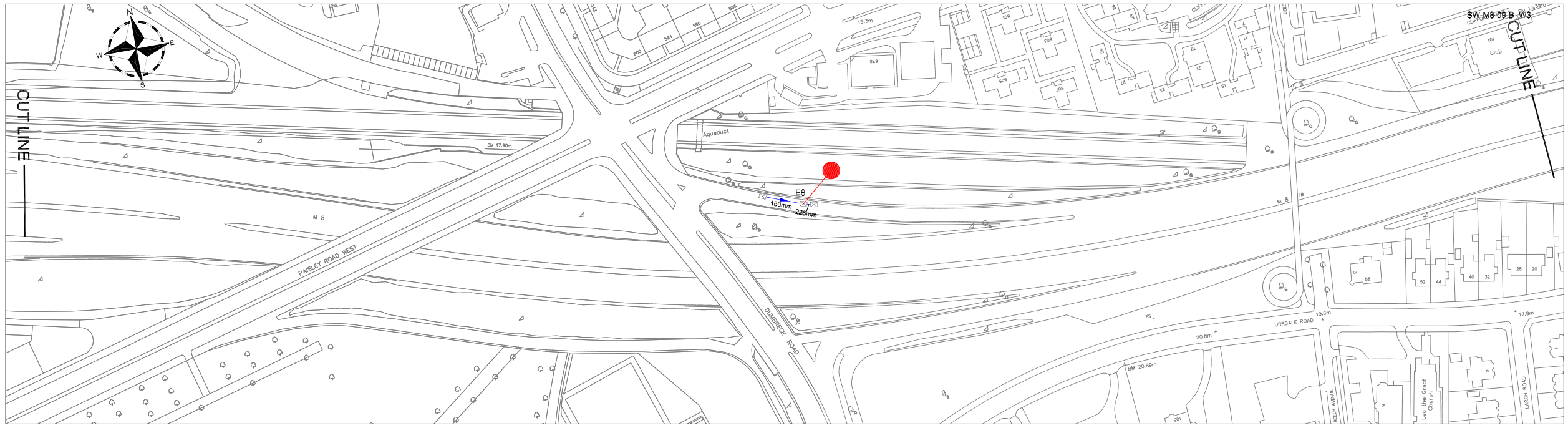
Drawn	Date	Status
Checked	Date	
Approved	Date	Cad Reference: SW-M8-08-B

Drawing No.:
M8 - SHEET 08 OF 18

Revision:







LEGEND

- MANHOLE PLATED OVER
- MANHOLE TO BE PLATED OVER

Scale
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1:2500 @ A3

Rev	Date	Drawn	Description	Chkd	Appvd

Client
SCOTTISH EXECUTIVE

Unit Managers

Amey Highways
Langmuir Way
Bargeddie
Glasgow tel.: 0141 781 6900
G69 7RW fax.: 0141 771 0893
FAIRHURST

Project Title
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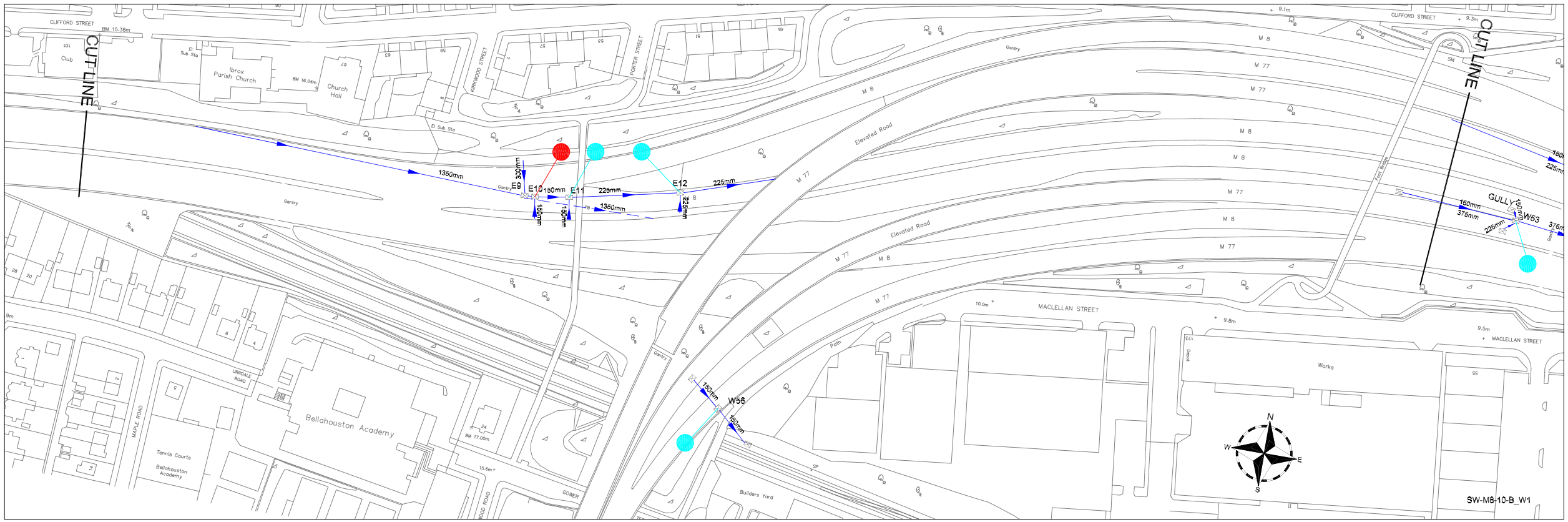
SOUTH WEST TRUNK ROAD UNIT

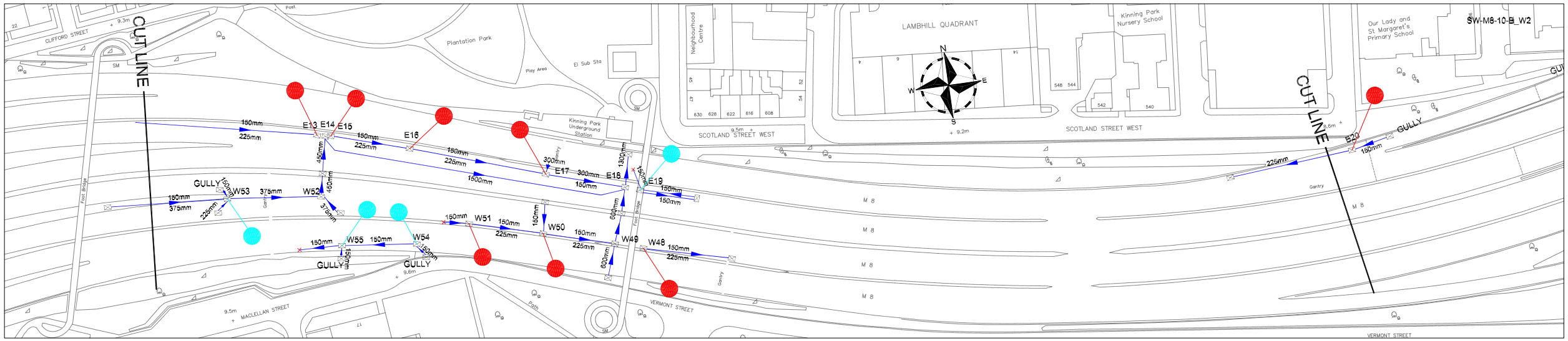
Drawing Title
M8 MOTORWAY

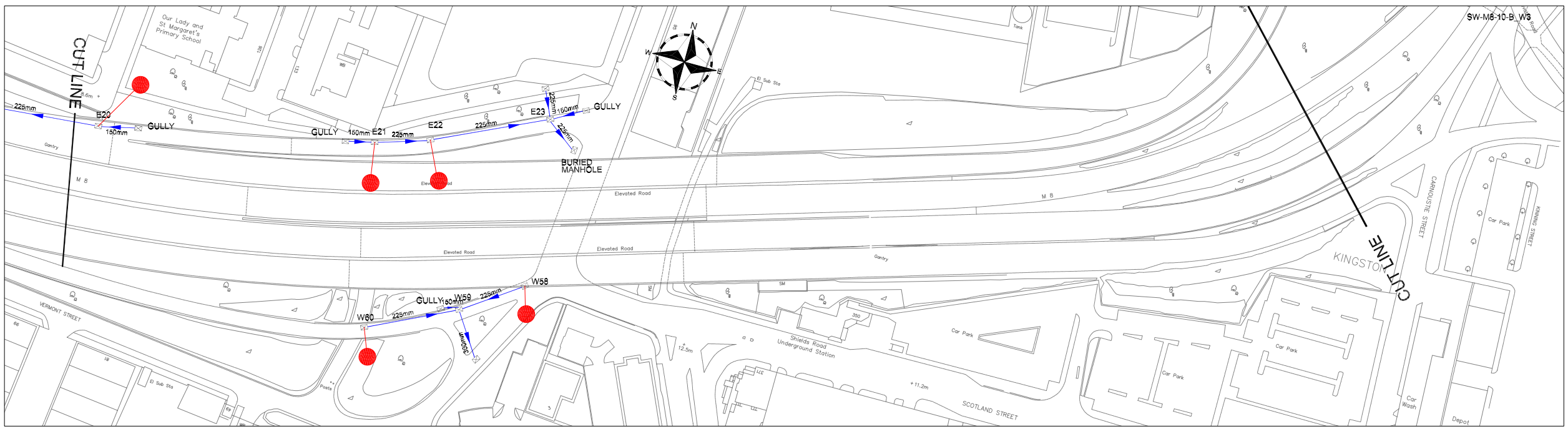
Drawn	Date	Status
Checked	Date	
Approved	Date	Cad Reference: SW-M8-09-B

Drawing No.:
M8 - SHEET 09 OF 18

Revision:







LEGEND

- MANHOLE PLATED OVER
- MANHOLE TO BE PLATED OVER

Scale
1:1250 @ A1
1:2500 @ A3

Rev	Date	Drawn	Description	Chkd	Appvd

Client
SCOTTISH EXECUTIVE

Unit Managers

Amey Highways
Langmuir Way
Bargeddie
Glasgow tel.: 0141 781 6900
G69 7RW fax.: 0141 771 0893
FAIRHURST

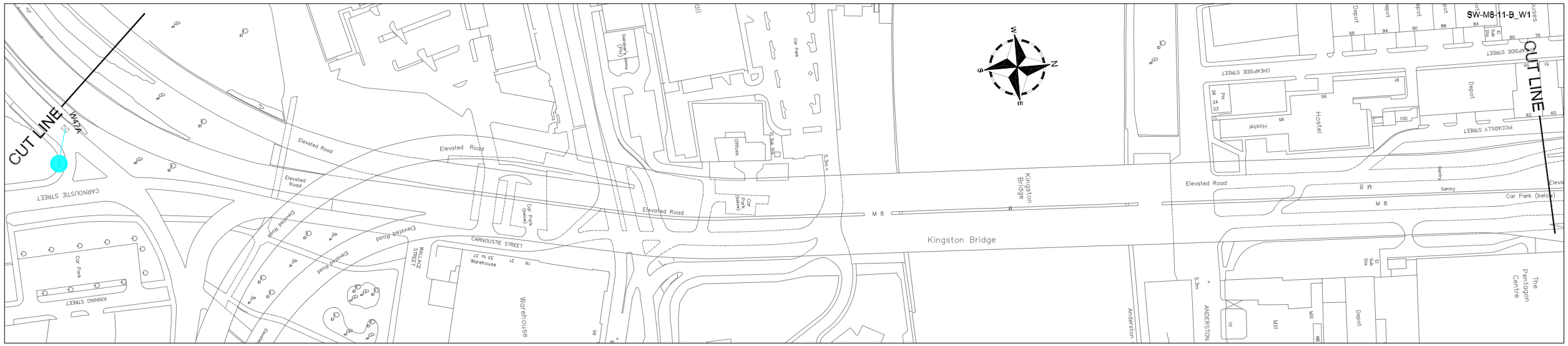
Project Title
TERM CONTRACT FOR MANAGEMENT AND MAINTENANCE OF THE SCOTTISH TRUNK ROAD NETWORK
SOUTH WEST TRUNK ROAD UNIT

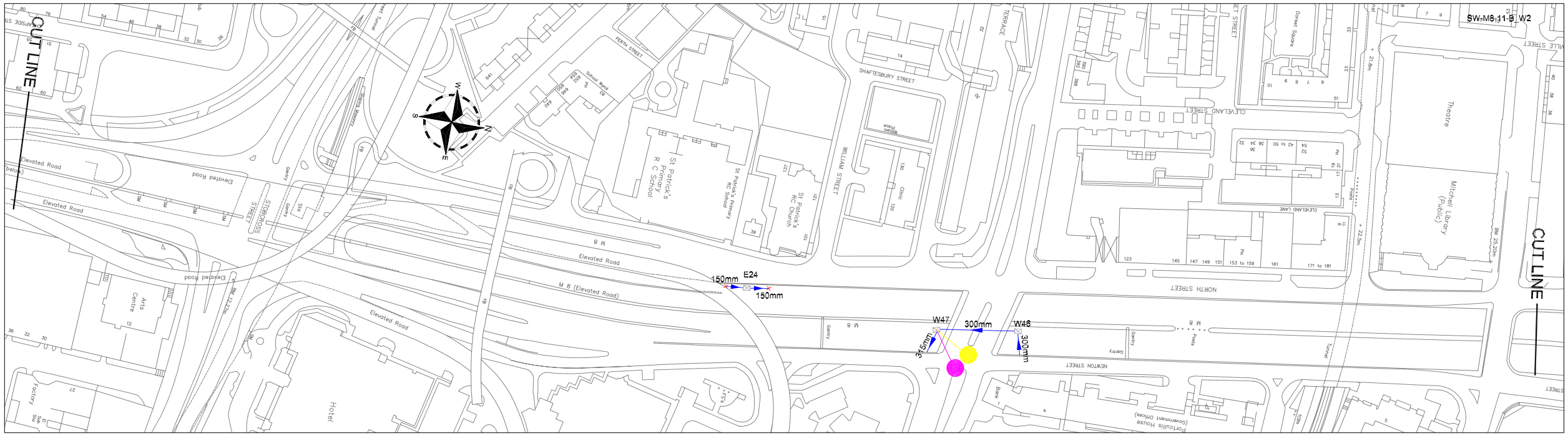
Drawing Title
M8 MOTORWAY

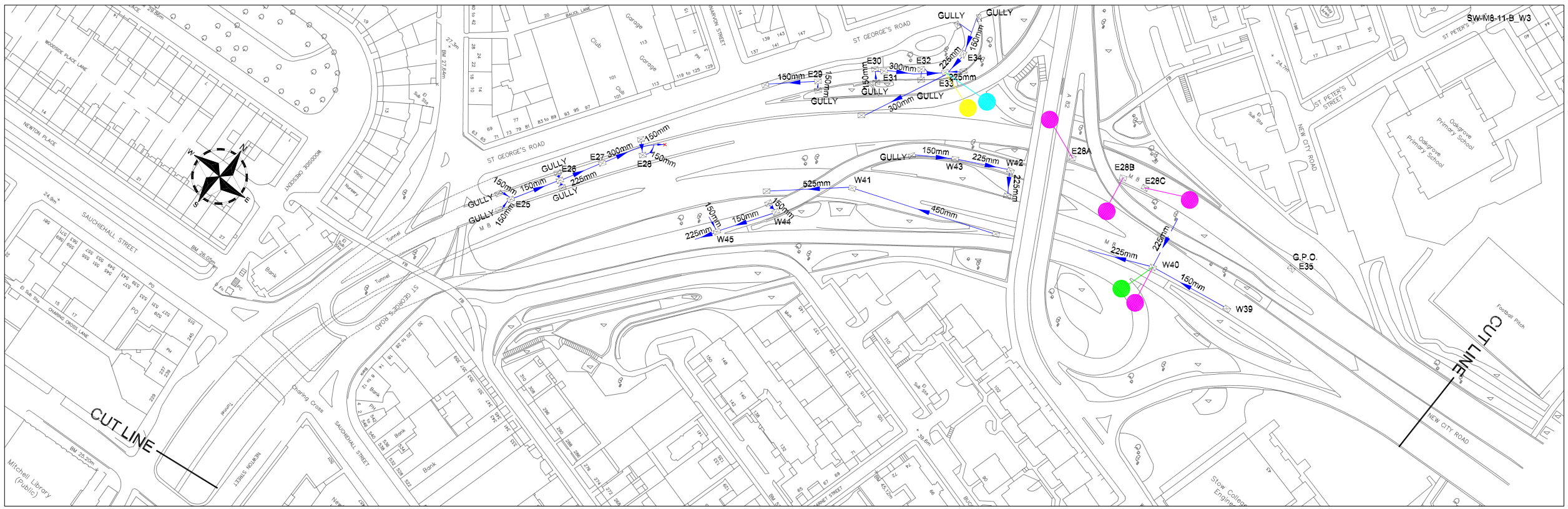
Drawn	Date	Status
Checked	Date	
Approved	Date	Cad Reference: SW-M8-10-B

Drawing No.:
M8 - SHEET 10 OF 18

Revision:







LEGEND

- QUARTERLY INSPECTION
- BI-ANNUAL INSPECTION
- RMC READY RAISE SYSTEM TO BE INSTALLED
- RMC READY RAISE SYSTEM INSTALLED
- EPOXY REPAIR ONLY

Scale
1:1250 @ A1
1:2500 @ A3

Rev	Date	Drawn	Description	Chkd	Appvd
1	25-1-5	AWB			

Client
SCOTTISH EXECUTIVE

Unit Managers

Amey Highways
Langmuir Way
Bargeddie
Glasgow tel.: 0141 781 6900
G69 7RW fax.: 0141 771 0893

FAIRHURST

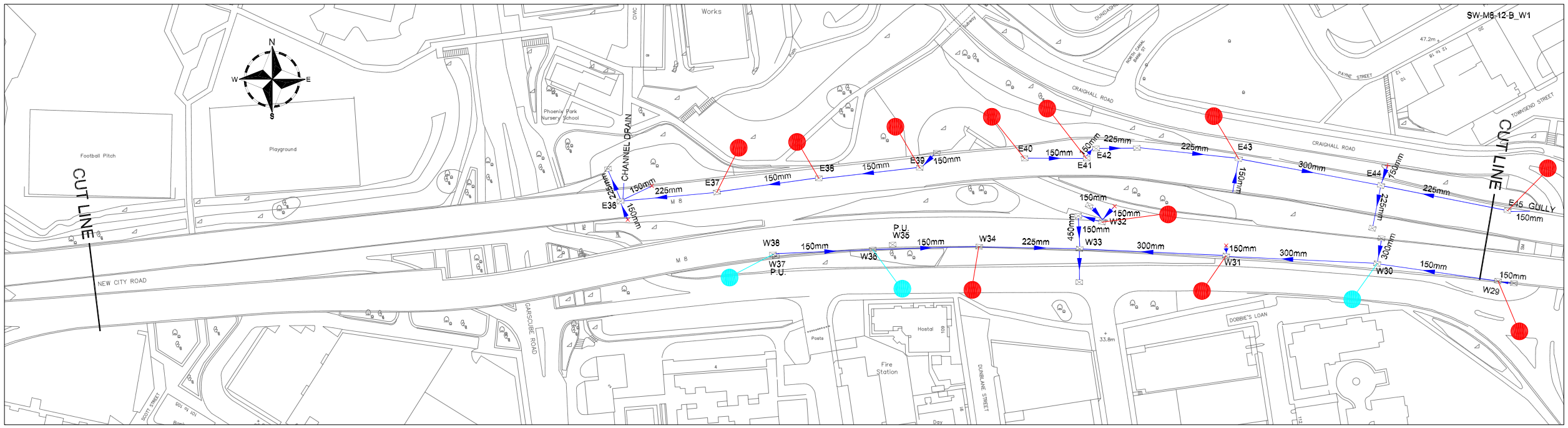
Project Title
TERM CONTRACT FOR MANAGEMENT AND MAINTENANCE OF THE SCOTTISH TRUNK ROAD NETWORK
SOUTH WEST TRUNK ROAD UNIT

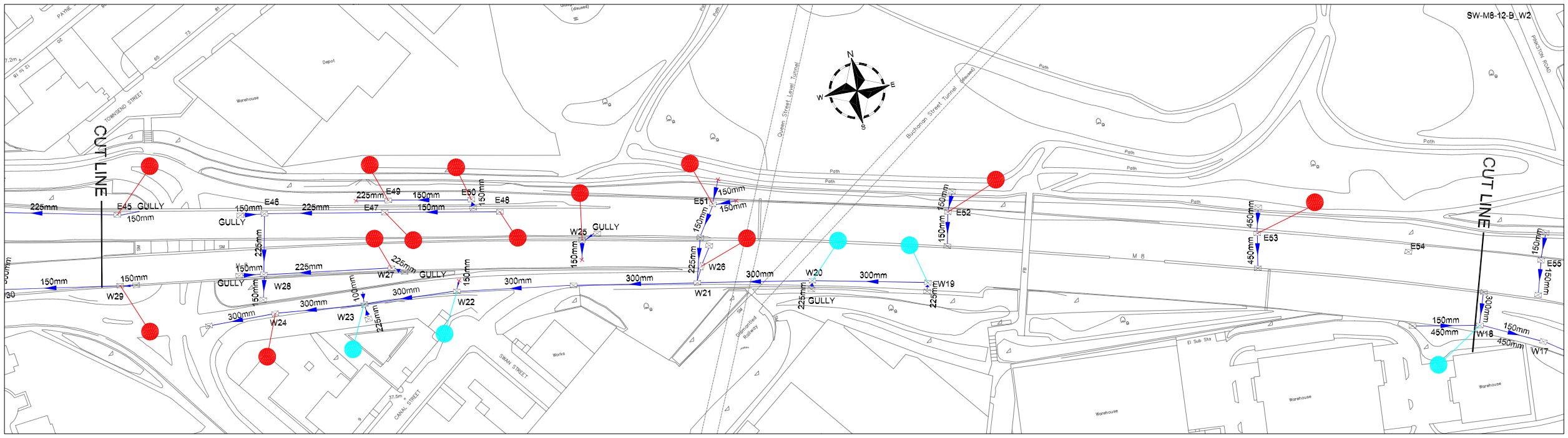
Drawing Title
M8 MOTORWAY

Drawn	Date	Status
Checked	Date	
Approved	Date	Cad Reference: SW-M8-11-B

Drawing No.:
M8 - SHEET 11 OF 18

Revision: 1





LEGEND

- MANHOLE PLATED OVER
- MANHOLE TO BE PLATED OVER

Scale
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1:2500 @ A3

Rev	Date	Drawn	Description	Chkd	Appvd

Client
SCOTTISH EXECUTIVE

Unit Managers
Amey Highways
Langmuir Way
Bargeddie
Glasgow tel.: 0141 781 6900
G69 7RW fax.: 0141 771 0893
FAIRHURST

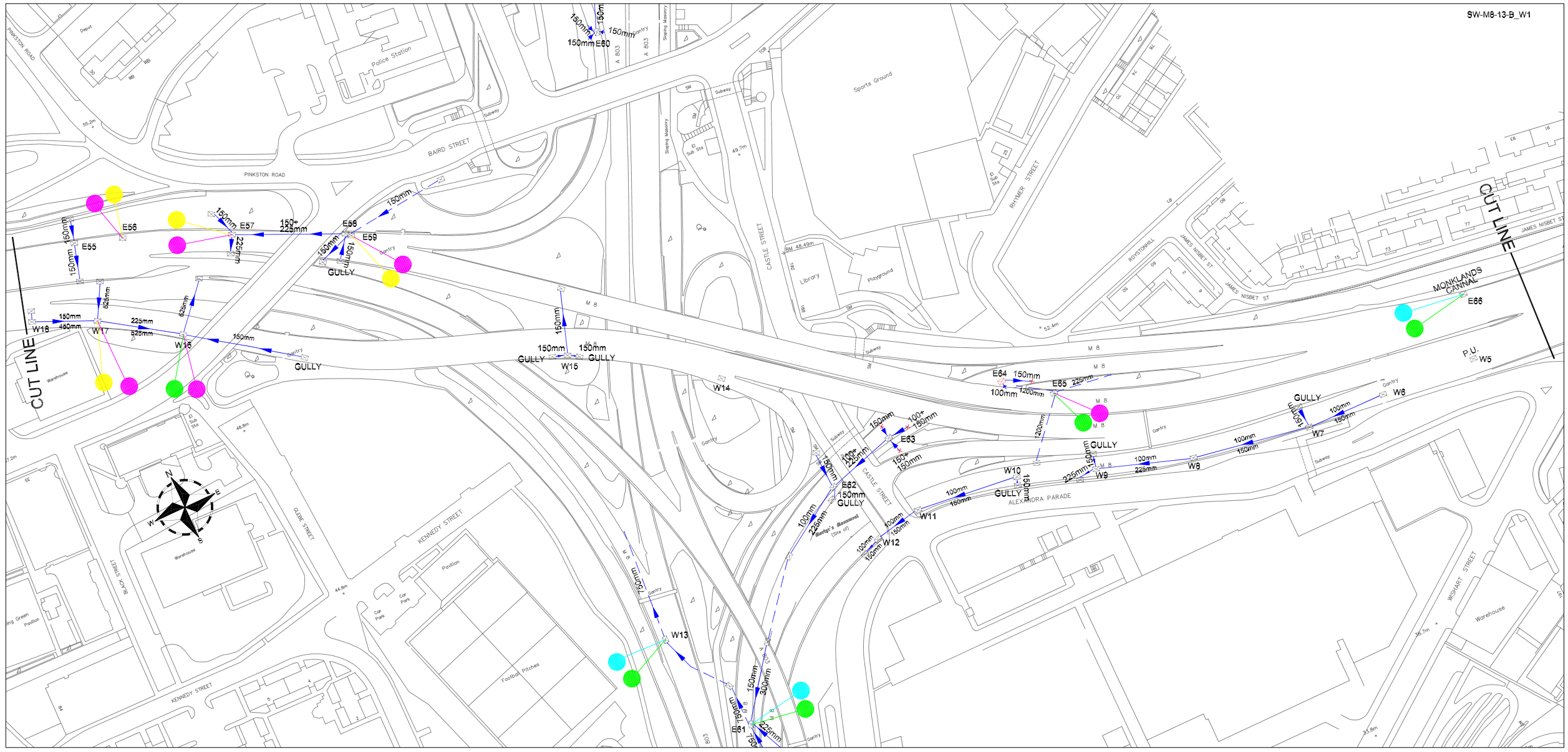
Project Title
TERM CONTRACT FOR MANAGEMENT AND MAINTENANCE OF THE SCOTTISH TRUNK ROAD NETWORK
SOUTH WEST TRUNK ROAD UNIT

Drawing Title
M8 MOTORWAY

Drawn	Date	Status
Checked	Date	
Approved	Date	Cad Reference: SW-M8-12-B

Drawing No.:
M8 - SHEET 12 OF 18

Revision:



LEGEND

- QUARTERLY INSPECTION
- BI-ANNUAL INSPECTION
- RMC READY RAISE SYSTEM TO BE INSTALLED
- RMC READY RAISE SYSTEM INSTALLED
- EPOXY REPAIR ONLY

Scale
1:1250 @ A1
1:2500 @ A3

Rev	Date	Drawn	Description	Chkd	Appvd
1	25-1-5	AWB			

Client
SCOTTISH EXECUTIVE

Unit Managers

Amey Highways
Langmuir Way
Bargeddie
Glasgow G69 7RW
tel.: 0141 781 6900
fax.: 0141 771 0893
FAIRHURST

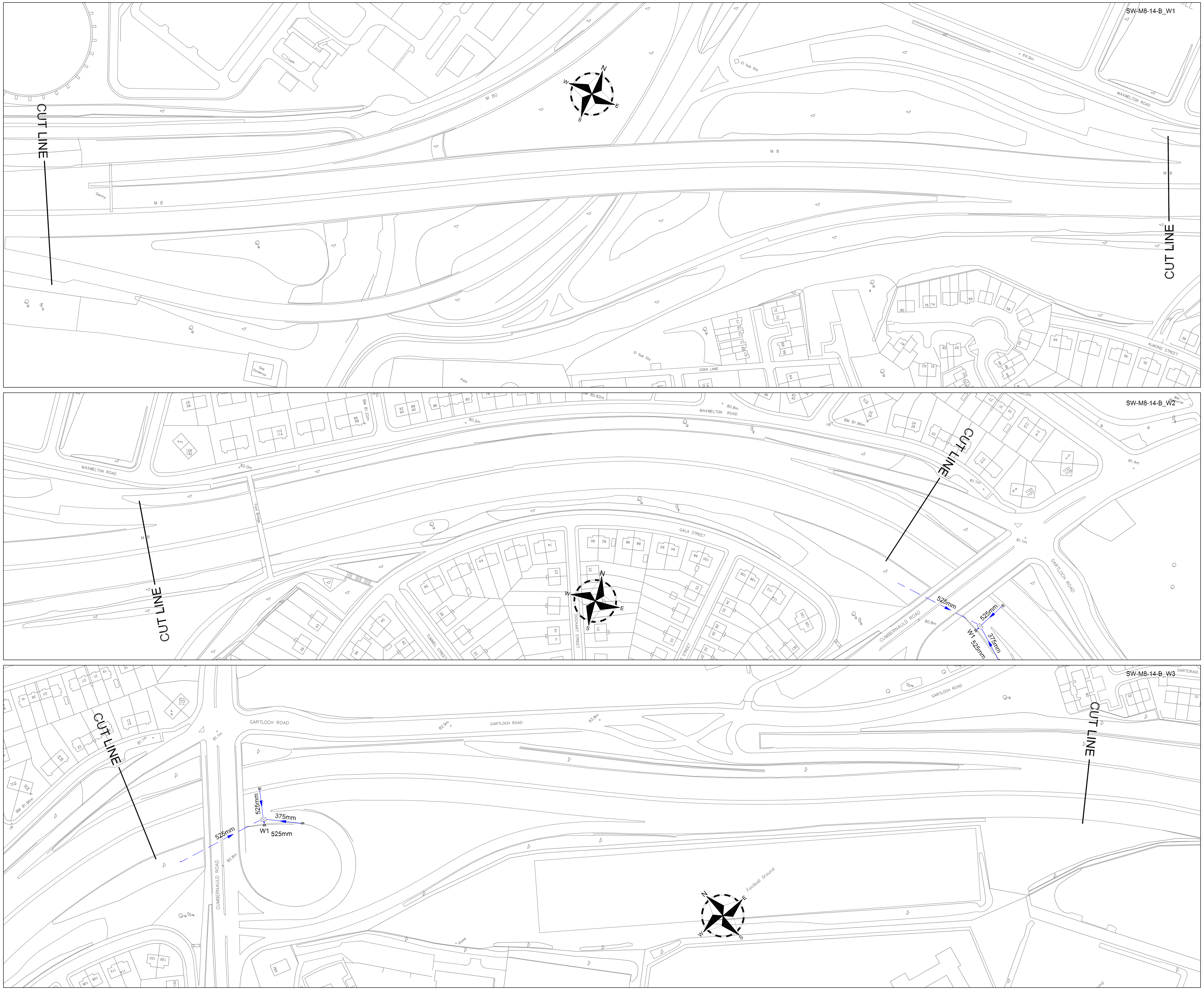
Project Title
TERM CONTRACT FOR MANAGEMENT AND MAINTENANCE OF THE SCOTTISH TRUNK ROAD NETWORK
SOUTH WEST TRUNK ROAD UNIT

Drawing Title
M8 MOTORWAY

Drawn	Date	Status
Checked	Date	Cad Reference: SW-M8-13-B
Approved	Date	

Drawing No.:
M8 - SHEET 13 OF 18

Revision: 1



LEGEND

- MANHOLE PLATED OVER
- MANHOLE TO BE PLATED OVER

Scale
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1:2500 @ A3

Rev	Date	Drawn	Description	Chkd	Appvd

Client
SCOTTISH EXECUTIVE

Unit Managers
amey
Amey Highways
Langmuir Way
Bargeddie
Glasgow tel.: 0141 781 6900
G69 7RW fax.: 0141 771 0893
FAIRHURST

Project Title
TERM CONTRACT FOR MANAGEMENT AND MAINTENANCE OF THE SCOTTISH TRUNK ROAD NETWORK
SOUTH WEST TRUNK ROAD UNIT

Drawing Title
M8 MOTORWAY

Drawn	Date	Status
Checked	Date	Cad Reference
Approved	Date	SW-M8-14-B

Drawing No.: M8 - SHEET 14 OF 18
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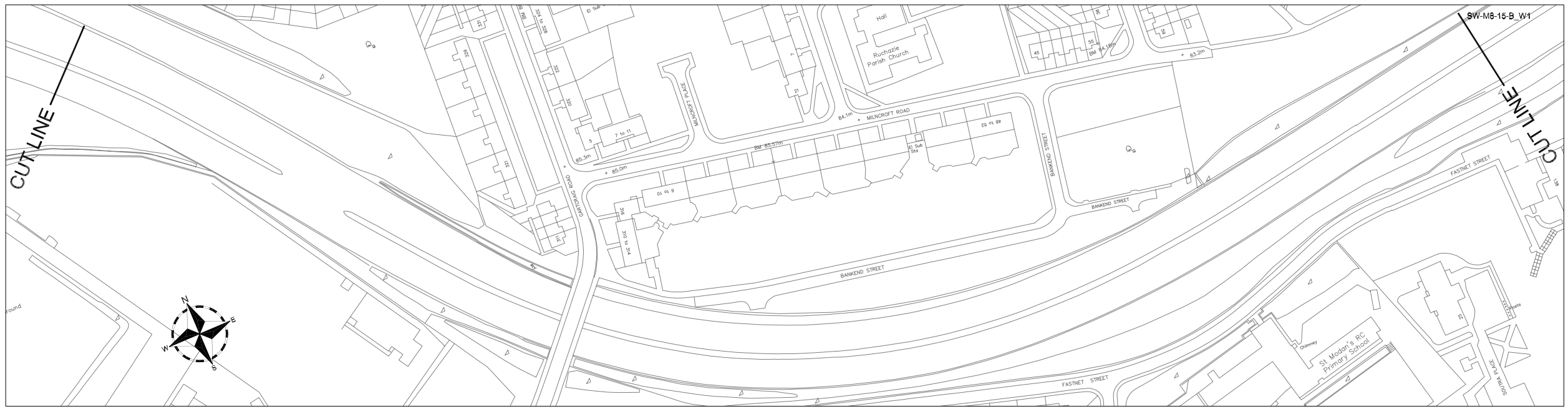

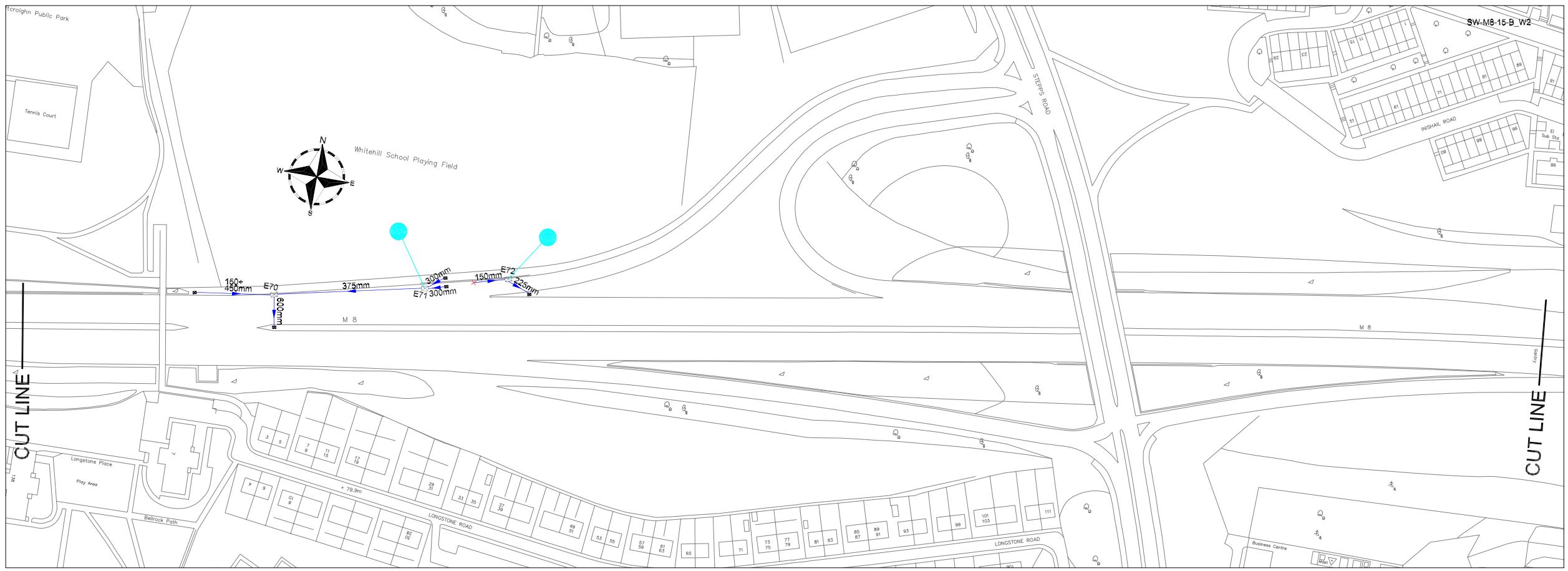

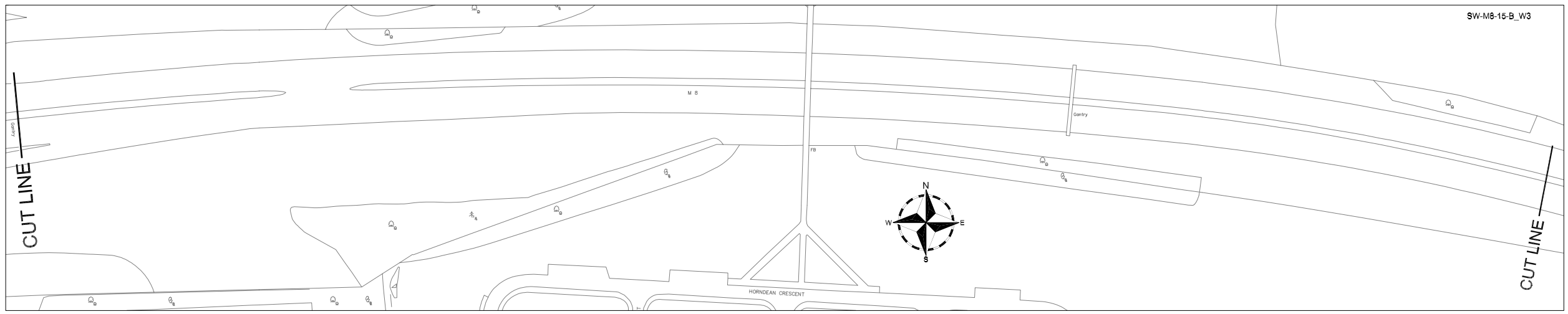

LEGEND

- MANHOLE PLATED OVER
- MANHOLE TO BE PLATED OVER

Scale
1:1250 @ A1
1:2500 @ A3

Rev	Date	Drawn	Description	Chkd	Appvd

Client
SCOTTISH EXECUTIVE

Unit Managers

Amey Highways
Langmuir Way
Bargeddie
Glasgow tel.: 0141 781 6900
G69 7RW fax.: 0141 771 0893
FAIRHURST

Project Title
TERM CONTRACT FOR MANAGEMENT AND MAINTENANCE OF THE SCOTTISH TRUNK ROAD NETWORK
SOUTH WEST TRUNK ROAD UNIT

Drawing Title
M8 MOTORWAY

Drawn	Date	Status
Checked	Date	
Approved	Date	Cad Reference: SW-M8-15-B

Drawing No.:
M8 - SHEET 15 OF 18

Revision:

LEGEND

- MANHOLE PLATED OVER
- MANHOLE TO BE PLATED OVER

Scale
1:1250 @ A1
1:2500 @ A3

Rev	Date	Drawn	Description	Chkd	Appvd

Client
SCOTTISH EXECUTIVE

Unit Managers

Amey Highways
Langmuir Way
Bargeddie
Glasgow tel.: 0141 781 6900
G69 7RW fax.: 0141 771 0893
FAIRHURST

Project Title
TERM CONTRACT FOR MANAGEMENT AND MAINTENANCE OF THE SCOTTISH TRUNK ROAD NETWORK
SOUTH WEST TRUNK ROAD UNIT

Drawing Title
M8 MOTORWAY

Drawn	Date	Status
Checked	Date	
Approved	Date	Cad Reference: SW-M8-16-B

Drawing No.:
M8 - SHEET 16 OF 18

Revision:

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SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 1

MANAGEMENT, INSPECTION AND CYCLIC MAINTENANCE

ANNEX 7.1/B – Types of Category 1 Defects

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SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 1

MANAGEMENT, INSPECTION AND CYCLIC MAINTENANCE

ANNEX 7.1/B – Types of Category 1 Defects

1. Category 1 Defects include but shall not be limited to the following Defects

   (i) carriageway Defects including defective ironware abrupt level differences and edge deterioration

   (ii) excessive standing water and water discharging onto and/or flowing across the road

   (iii) damaged safety fences, parapet fencing and other barriers

   (iv) debris and spillage in traffic Lanes or on hardshoulders

   (v) kerbing edging and channel Defects

   (vi) trees shrubs grassed areas and hedges which by virtue of their position in visibility splays or other locations or condition constitute a hazard to road users

   (vii) defective missing loose or displaced road studs particularly of the "Catseye" type, lying in the carriageway, hardshoulder or laybys

   (viii) faults in Structures for example impact damage to superstructures supports or parapets, flood damage and insecure expansion joint parts

   (ix) difference in level between abutting concrete slabs at transverse or longitudinal joints

   (x) rocking gratings or covers in urban areas causing intrusive noise

   (xi) damaged boundary fences where animals or children could gain access

   (xii) dead animals

   (xiii) overhead wires in a dangerous condition

   (xiv) vandalism particularly if electrical consequences

   (xv) loss of skidding resistance

   (xvi) blocked gully and piped grip gratings and obstructed channels grips and slot drains

   (xvii) earthslips where debris has encroached or shall be likely to encroach on to the road

   (xviii) Rocks or rock faces constituting a hazard to road users

   (xix) Road markings

      (a) missing road markings

      (b) badly worn road markings and

      (c) slippery road marking

(xx) Road traffic signs including but not limited to

(a) major sign plate or structural failure

(b) electrically or otherwise unsafe apparatus

(c) damage which may cause a dangerous obstruction to road traffic or other road users

(d) missing regulatory or warning signs or belisha beacons

(e) missing information

(f) missing plates or panels

(g) obscuration or failure of illumination to a regulatory or warning sign

(h) structural fault requiring maintenance in advance of the next Cyclic Maintenance visit for example a. misaligned sign or

(xxi) Road Traffic Signals

(a) conflicting signals

(b) electrical faults

(c) gas leaks

(d) signals damaged and in a dangerous condition or

(e) defective signals which shall be likely to cause abnormal traffic conditions.

(xxii) Road Lighting

(a) column failure

(b) exposed or live electrical equipment or

(c) component failure resulting in a high safety risk.

(d) number of consecutive outages

No of Outages	Condition
3 or more	Up to and including 12 metres mounting height
2 or more	Over 12 metres mounting height including both lamps in dual optic units
25% or more	Single multi optic post top or high mast column
1 or more	Either side of a pedestrian crossing
1 or more	Opposite or immediately adjacent to a road junction
1 or more	Within 30 mph speed limits

(e) supply failure to 2 or more consecutive column

(f) a phase failure – 1 in 3 lamps out in road section

(g) a structural fault requiring maintenance in advance of the next Cyclic Maintenance visit – Category 3 or 4 from column general inspection

(xxiii) failure of ice sensors during the Winter Service Period

(xxiv) missing or damaged snow poles or snow gates during Winter Service Period

(xxv) damaged snow and ice hidden message signs during the Winter Service Period

(xxvi) empty grit bins and self help grit heaps during the Winter Service Period

(xxvii) ineffective arrester beds and

(xxviii) Any missing or damaged reference marker or network node marker used to reference and record Routine Maintenance and Management System data shall be treated as a Category 1 Defect.

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SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 1

MANAGEMENT, INSPECTION AND CYCLIC MAINTENANCE

ANNEX 7.1/C –Trunk Roads Requiring Safety Patrols

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SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 1

MANAGEMENT INSPECTION AND CYCLIC MAINTENANCE

ANNEX 7.1/C – Trunk Roads Frequency Safety Patrols

Trunk Roads Route
M 73
M74
M77
M8
M80
M898
A8
A77 Meiklewood to Dutch House Roundabout (A78)
A898 Erskine Crossing

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SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 1

MANAGEMENT, INSPECTION AND CYCLIC MAINTENANCE

ANNEX 7.1/D – Routine Maintenance and Management System CODES

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Routine Maintenance and Management System CODES

ANNEX 7.1/D

Infrastructure/Activity	Detailed Inspection Code	Detailed Inspection Requirements (Brief description)	Permitted Cyclic Maintenance Code	Cyclic Maintenance (Brief description)	Permitted Inventory Codes	Permitted Inventory Items
Carriageway	MC	Annual Detailed Inspection	SW	Weed Control as Clause 3002 of the Specification	CI CR CW LB HS XO	Central Island Central Reserve Carriageway Layby Hardshoulder Crossover
	MD	Two yearly Detailed Inspection				
	MS	Structural Pavement condition survey				
Pedestrian and Cycle Facilities	FC	Annual Detailed Inspection	SW	Weed Control as Clause 3002 of the Specification	FW	Footway
Covers Gratings and Frames	CG	Annual Detailed Inspection		Weed Control as Clause 3002 of the Specification	CT CP CH GY IN MH PG	Cycle Facility Catchpit Channel Gully Interceptor Manhole Piped Grip
	CD	2 Yearly central reserve Inspection				
Kerbs and Edgings	KC	Annual Detailed Inspection		No Cyclic Maintenance required	CH KB	Channel Kerb
	KD	2 Yearly central reserve Inspection				
Linear Drainage Systems	PD	Annual Detailed Inspection		As Clause 6104 of the Specification	CD CP FD IN GY MH OF PD PG	Counterfort Drain Catchpit French Drain Interceptor Gully Manhole Outfall Piped Drainage Piped Grip
	PI	Special investigation prompted by evidence of a specific problem				
	VC	Specialist Video Inspection				

Infrastructure/Activity	Detailed Inspection Code	Detailed Inspection Requirements (Brief description)	Permitted Cyclic Maintenance Code	Cyclic Maintenance (Brief description)	Permitted Inventory Codes	Permitted Inventory Items
Gullies Catchpits Soakaways and Oil Separators	GC	Annual Detailed Inspection	PJ	As Clause 6102 of the Specification	CP GY IN MH PG	Catchpit Gully Interceptor Manhole Piped Grip
Drainage Grips	GP	Annual Detailed Inspection		As Clause 6103 of the Specification	GP	Grips
Ditches	DI	5 year Detailed Inspection			DI	Ditches
Filter Material	FD	Filter Drains and Soakaways - Annual Detailed Inspection		As Clause 6105 of the Specification	CD FD	Counterfort Drain Filter Drain
	FI	Filter Drain - Special - Specific Inspection to identify specific Defects i.e. ponding				
Drainage Structures	CV	General - Annual Detailed Inspection		As Clause 6106 of the Specification	CV	Culvert
	CG	Grilles Annual Detailed Inspection during September				
Balancing Ponds	BP	6 monthly Detailed Inspection			BP	Balancing Ponds
Ancillary Drainage Items	AI	Outfalls, headwalls and Aprons - Relating to the Annual Detailed Inspection		As Clause 6107 of the Specification	AI OF SV	Ancillary Equipment Outfall Sluice Valves
	AS	Sluices and tidal flaps - relating to the 6 monthly Detailed Inspection				

Infrastructure/Activity	Detailed Inspection Code	Detailed Inspection Requirements (Brief description)	Permitted Cyclic Maintenance Code	Cyclic Maintenance (Brief description)	Permitted Inventory Codes	Permitted Inventory Items
	AP	Pumps and specialist equipment - relating to the Detailed Inspection				
Communications and Miscellaneous Equipment	CX	14 day Detailed Inspection		No Cyclic Maintenance required	CC TB TV SG	Communications Cabinet Emergency Telephone Box CCTV and Speed Cameras Road Traffic Signs
	CM	3 month inspections				
	CT	3 month inspections				
	CC	Annual Detailed Inspection				
Geotechnical Assets	EC	Relating to Annual Detailed Inspection		No Cyclic Maintenance required	EC	Embankments and Cuttings
	ES					
Grass Bulbs and Wildflower Areas				as Clause 3007 of the Specification		
Established Trees and Shrubs				as Clause 3010 of the Specification		
Waterbodies				as Clause 3011 of the Specification		
Special Ecological Measures				as Clause 3012 of the Specification		
Litter and Refuse	SW	Sweeping and cleansing Inspections when Required	SC	Keeping Roads Clean as Clause 6108 of the Specification	CH CI CR CT	Channel Central Island Central Reserve Cycle Facility
			SW	Weed Control as Clause 3002 of the Specification	CW EC FW HS	Carriageway Embankments and Cuttings Footway Hardshoulder

Infrastructure/Activity	Detailed Inspection Code	Detailed Inspection Requirements (Brief description)	Permitted Cyclic Maintenance Code	Cyclic Maintenance (Brief description)	Permitted Inventory Codes	Permitted Inventory Items
			LT	Litter Picking as Clause 6108 of the Specification	KB LB VG XO	Kerb Layby Verge Crossover
Road Restraint Systems Vehicular and Pedestrian	SF		FN	As Clause 6101 of the Specification	SF	Safety Fence
	PG				PR	Pedestrian Guardrail
	CB					
Fences, Walls, Screens and Noise Barriers	BF	Annual Detailed Inspection		No Cyclic Maintenance required	FB	Fences and Barriers
					RW	Retaining Walls
Road Markings	RR	Road markings - HSM – Retro-reflectivity by HSM Survey		No Cyclic Maintenance required	LH	Road Markings - Hatched
	RV	Visual Inspection of road markings			LL	Road Markings - Longitudinal
	RH	Alternative inspection of road markings			PX	Pedestrian Crossing
	RS	Skid resistance measurement inspections			RF	Reference Marker Post
					RM	Road Markings - (Transverse and Special)
Road Studs	RC	TD 26 Routine Visual Inspection		No Cyclic Maintenance required	RS	Road Studs
Road Traffic Signs	SS	Signs - Night Inspections - Lit signs	CL	Traffic Sign Cleaning as Clause 6103 of the Specification	RF	Reference Marker Post
	SG	Detailed Inspection - visual performance and structural integrity	CM	Maintenance of sign lighting units as Clause 6103 of the	SB	Bollards (Safety)

Infrastructure/Activity	Detailed Inspection Code	Detailed Inspection Requirements (Brief description)	Permitted Cyclic Maintenance Code	Cyclic Maintenance (Brief description)	Permitted Inventory Codes	Permitted Inventory Items
				Specification		
	SE	Visual electrical - Detailed Inspection electrical safety and Operation			SG	Road Traffic Signs
	SV	Visual performance - sign plate replacement and visual performance				
	ST	Electrical testing				
Road Traffic Signals	TG	Detailed Inspection in accordance with para. 2.3 of TD 24	TM	Traffic Signals – Electro - Mechanical	CC	Communication Cabinet
	TD	Detailed Inspection in accordance with para. 4.2 of TD 24	TB	Traffic Signals - Backup batteries	DL	Detector Loops
	TO	Detailed Inspection of Obscuration	TL	Traffic Signals - lamp changes	TS	Road Traffic Signals
			TC	Traffic Signals - lens cleaning		
Road Lighting	SL	Night Inspections	BL	As TD 23 of DMRB	LP	Road Lighting Point
	LC	Daytime Inspection at time of pedestrian subways	HM	As TD 23 of DMRB	SB	Bollards (Safety)
	LP	Lamp change Inspection - At time of bulk lamp change			SG	Road Traffic Signs
	LA	Detailed Inspection				
	LE	Electrical testing				
Ice Sensors	IC				IS	Ice Sensors

Infrastructure/Activity	Detailed Inspection Code	Detailed Inspection Requirements (Brief description)	Permitted Cyclic Maintenance Code	Cyclic Maintenance (Brief description)	Permitted Inventory Codes	Permitted Inventory Items
Arrester Beds	AB				AB	Arrestor Beds
Snow Poles	SP	Detailed Inspection	SM	As Clause 2809 of the	SP	Snow Poles
			SN	Specification	SP	Snow Poles
Traffic Control Barriers	TC				CB	Traffic Control Barriers
Removal of Graffiti				As Clause 6119 of the Specification		

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 1

MANAGEMENT, INSPECTION AND CYCLIC MAINTENANCE

ANNEX 7.1/E – Defect Codes

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SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 1

MANAGEMENT, INSPECTION AND CYCLIC MAINTENANCE

ANNEX 7.1/E – Defect Codes

1 DEFECT CODES

1.1 General

1.1.1 Where there are no attributes or units in the following tables the Operating Company shall insert the most appropriate attribute and unit of measurement at the time of inspection or Safety Patrol others in the following tables contained in this Annex 7.1/E for incorporation into Routine Maintenance and Management System.

"Minimum" in the following tables means

(i) the lowest accepted value that can be recorded in the Routine Maintenance and Management System attributable to that Defect code.

"Maximum" in the following tables means

(ii) the largest acceptable value that can be recorded in the Routine Maintenance and Management System attributable to that Defect code.

Where there are no minimum or maximum values in the following tables all values shall be permitted.

1.2 Carriageway

1.2.1 Bituminous Carriageways

Description	Code	Attribute	Units	Minimum	Maximum
Localised cracking Cracking confined to a discrete area of the carriageway and not associated with structural maintenance activities.	LOCK	area	sq. metres	1	200
Localised edge deterioration Cracking confined to a discrete area of the carriageway and not associated with structural maintenance activities.	LODT	length	metres	1	50
Surfacing joints Open or excessive joints.	SRJT	length	metres	1	50
Cracking around ironwork	CKIR	area	sq. metres	1	200
Patch – adjacent cracking	PACK	area	sq. metres	1	200
Patch – loss of material (fretting)	PLMT	area	sq. metres	1	200
Patch – difference in level Difference in level of a patch with the surrounding carriageway.	PDLV	area	sq. metres	1	200
Trench RI – adjacent cracking Cracking around a reinstated trench.	TACK	area	sq. metres	1	200

Description	Code	Attribute	Units	Minimum	Maximum
Trench RI – loss of material Loss of material (fretting) from a reinstated trench	TLMT	area	sq. metres	1	200
Trench RI – difference in level Difference in level between a reinstated trench and the surrounding carriageway	TDLV	area	sq. metres	1	200
Pothole	POTH	area	sq. metres	1	50
Single crack	CRCK	area	sq. metres	1	50
Patch – material cracking Cracking of the material used for patching.	PMCK	area	sq. metres	1	200
Trench RI – material cracking Cracking of the material used to reinstate the trench.	TMCK	area	sq. metres	1	200
Bituminous surfacing fretting Loss of material from the carriageway Surface.	BFRT	area	sq. metres	1	200
Other	OTHR				
None	NONE				

1.2.2 Concrete Carriageways

Description	Code	Attribute	Units	Minimum	Maximum
Joint seals	JTSL				
Shallow spalling at joints / cracks	SSPL				
Deep spalling at joints	DSPL				
Opening of longitudinal joint	OLJT	length	metres	1	100
Stepping at joint / crack	STEP				
Vertical movement under traffic	VMVT				
Evidence of pumping	EPMP				
Settlement / ponding	SETT	area	sq metres	1	250
Cracking	CRCK	area	sq metres	1	250
Failed overbanding / sealed cracks	OVSD				
Surface crazing	SRCZ	area	sq metres	1	100
Scaling	SCAL	area	sq metres	1	100
Miscellaneous surface Defects	MSRF	area	sq metres	1	100
Surface texture worn	SRTX	area	sq metres	1	250
Initiate skid test	SKID	length	metres	1	30
Failed repair	RFAL				
Other	OTHR				
None	NONE				

1.2.3 Pedestrian and Cycle Facilities

Description	Code	Attribute	Units	Minimum	Maximum
Standing water	STWT	length	metres	1	50
Slab profile – uneven/trips	SLPF	area	sq metres	1	200
Slab cracking	SLCK	area	sq metres	1	200
Slab rocking	SROK	area	sq metres	1	200
Block profile	BKPF	area	sq metres	1	200

Description	Code	Attribute	Units	Minimum	Maximum
Bituminous surfacing – potholes	BPOT	area	sq metres	1	200
Bituminous surfacing - local cracking. Cracking confined to a discrete area of the footway / cycle track.	BLCK	area	sq metres	1	200
Bituminous surfacing – extensive cracking. Cracking affecting the major part of a footway / cycle facility.	BECK	area	sq metres	1	500
Bituminous surfacing – fretting. Loss of material from the footway / cycle facility surface.	BFRT	area	sq metres	1	200
Failed patch – adjacent cracking	FPCK	area	sq metres	1	200
Failed patch – loss of material. Loss of material (fretting) from an existing area of patching.	FLMT	area	sq metres	1	200
Failed patch – difference in level	FDLV	area	sq metres	1	200
Overgrown by vegetation	OVGV	length	metres	1	100
Trench RI – adjacent cracking. Cracking around a reinstated trench	RACK	area	sq metres	1	200
Trench RI - loss of material. Loss of material (fretting) from a reinstated trench.	RLMT	area	sq metres	1	200
Trench RI – difference in level	RDLV	area	sq metres	1	200
Other	OTHR				
None	NONE				

1.2.4 Covers Gratings and Frames

Description	Code	Attribute	Units	Minimum	Maximum
Difference in level with road. Differential levels between items and abutting carriageway footway or cycle track surface	IDLV				
Difference in component levels. Differential levels between different components	ICLV				
Rocking under load	IRLD				
Cracked or broken	IBCK				
Missing Attention shall be paid to missing items which shall be likely to constitute a hazard	MISS				
Parallel gratings Gullies and other gratings in carriageways and cycle tracks which have gaps more than 20mm wide parallel to the normal line of movement of pedal and motor cycles shall be classed as Defects	PARL				

Description	Code	Attribute	Units	Minimum	Maximum
Smooth surface Worn covers which may cause pedal and motor cycle users to skid in wet conditions shall generally be considered to constitute an immediate hazard	SMTH				
Blockage. Applies to surface water catchment items.	BLOK	percentage	per cent	1	100
Seized	SIEZ	percentage	per cent	1	100
Other	OTHR				
None	NONE				

1.2.5 Kerbs and Edgings

Description	Code	Attribute	Units	Minimum	Maximum
Vertical projection.	EVPJ	length	metres	1	50
Horizontal projection	EHPJ	Length	metres	1	50
Loose / rocking Loose or rocking items which shall be creating or shall be likely to create a hazard	ELRK	Length	metres	1	50
Damaged Damaged or shattered items which shall be creating or shall be likely to create a hazard or lead to loss of support or protection	DAMG	Length	metres	1	50
Channel block alignment Poor local alignment of pre-formed channels which could give rise to danger or nuisance from standing water or damage to the Trunk Road caused by water penetration	CHAL	Length	metres	1	50
Missing	MISS	Length	metres	1	50
Impeded water flow (detritus). Detritus at the edge of the carriageway preventing overedge run-off and / or flow long the channel which could give rise to danger or nuisance from standing water or damage to the Trunk Road Structure by water penetration	IMWF	Length	metres	1	50
Weed growth Vegetation growth at the edge of the carriageway preventing over-edge run-off and/or flow along the channel which could give rise to danger or nuisance from standing water or damage to the Trunk Road Structure by water penetration	WEED	Length	metres	1	100
Other	OTHR				
None	NONE				

1.2.6 Linear Drainage Systems

Description	Code	Attribute	Units	Minimum	Maximum
Blockage	BLOK	Length	metres	1	100
Other malfunction	OMAL				
Flooding	FLOD	Area	sq metres	1	500
Drainage damage to road / verge	DRRD	Length	metres	1	100
Flood nuisance to properties	NPRP				
Flood nuisance to services	NSER				
Silted	SILT	Length	metres	1	100
Roots present	ROOT				
Cracking	CRCK	Area	sq metres	1	200
Deformation	DEFM	percentage	per cent	1	100
Collapsed	COLP				
Alignment irregular	LINE				
Standing water.	STWT	Length	metres	1	100
Scour	SCOR				
Other	OTHR				
None	NONE				

1.2.7 Gullies Catchpits Soakaways and Oil Separators

Description	Code	Attribute	Units	Minimum	Maximum
Damaged	DAMG				
Collapsed	COLP				
Silted	SILT	Length	metres	1	100
Blockage	BLOK	percentage	per cent	1	100
Shaft defective	SHFT				
Chamber / benching / pot defective	CHAM				
Invert / sump defective	INVT				
Ancillaries defective	ANCS				
Detritus / Refuse. Presence of detritus likely to impede the Function of the piped grip.	DETR				
Broken	BROK				
Other	OTHR				
None	NONE				

1.2.8 Drainage Grips

Description	Code	Attribute	Units	Minimum	Maximum
Weed growth	WEED	Length	metres	1	100
Detritus / refuse. Presence of detritus or refuse within a drainage grip.	DETR				
Blockage	BLOK	percentage	per cent	1	100
Flooding	FLOD	area	sq metres	1	500
Other	OTHR				
None	NONE				

1.2.9 Ditches

Description	Code	Attribute	Units	Minimum	Maximum
Weed growth	WEED	length	metres	1	100
Collapsed bank	CLBK	length	metres	1	100
Obstruction	OBST	length	metres	1	50
Deposited rubbish	DRUB				
Silted	SILT	length	metres	1	100
Flooding	FLOD	area	sq metres	1	500
Other	OTHR				
None	NONE				

1.2.10 Filter Material

Description	Code	Attribute	Units	Minimum	Maximum
Weed growth	WEED	length	metres	1	100
Filter drain damaged	FMDM	length	metres	1	50
Filter material displaced	FMDS	length	metres	1	50
Silted	SILT	length	metres	1	100
Flooding	FLOD	area	sq metres	1	500
Other	OTHR				
None	NONE				

1.2.11 Drainage Structures

Description	Code	Attribute	Units	Minimum	Maximum
Scour	SCOR				
Free flow impeded. Inadequate flow of water through the culvert	FRFL				
Silted	SILT	length	metres	1	100
Roots present.	ROOT				
Cracking.	CRCK	area	sq metres	1	200
Deformation.	DEFM	percentage	per cent	1	100
Collapsed	COLP				
Alignment Irregular	LINE				
Standing water	STWT	length	metres	1	100
Other	OTHR				
None	NONE				

1.2.12 Balancing Ponds

Description	Code	Attribute	Units	Minimum	Maximum
Function outfall regulating device. Damage or obstruction to the pond outlet which shall affect the controlled rate of discharge.	OUTF				
Blockage of inlet. Blockage of feeder pipe or ditch.	INLT				
Blockage of outlet. Blockage of outlet pipe or ditch	OUTL				

Description	Code	Attribute	Units	Minimum	Maximum
Silted. Silting in the pond causing a loss of storage capacity.	SILT	length	metres	1	100
Erosion of banks / walls / bunds. Damage or erosion to the pond banks walls or bunds.	ERSN				
Surcharge. Excess water overflowing from the balancing pond.	SURC				
Other	OTHR				
None	NONE				

1.2.13 Ancillary Drainage Items

Description	Code	Attribute	Units	Minimum	Maximum
Pump malfunction	PUMP				
Sluice malfunction	SLUI				
Tidal flap malfunction.	TIDL				
Headwall / apron condition	HAFL				
Trash screen blocked	TRSH				
Grilles blocked	GRIL				
Watergates blocked	WAGA				
Penstock malfunction	PSTK				
Pump malfunction	PUMP				
Sluice malfunction	SLUI				
Penstock malfunction	PSTK				
Other	OTHR				
None	NONE				

1.2.14 Communication and Miscellaneous Equipment

Description	Code	Attribute	Units	Minimum	Maximum
Not watertight. Housing or surroundings which shall not be watertight.	WTGT				
Damaged	DAMG				
Difficult access to cabinet or security impaired.	ACES				
Physical condition of cabinet	PHCD				
Breakdown/poor communications	BCOM				
Illegibility of Identity numbers	VISN				
Impaired visibility	VISA				
Inadequately drained	INDR				
Other	OTHR				
None	NONE				

1.2.15 Geotechnical Assets

Description	Code	Attribute	Units	Minimum	Maximum
Slip (non-rock). Deep seated slippage of the material within an embankment or cutting as typified by the "classic" slip circle	SLIP	length	metres	1	50
Slide (non-rock). Surface sliding of material down an embankment or cutting	SLID	length	metres	1	50
Rock slide	RSLI	length	metres	1	50
Seepage	SEEP	length	metres	1	50
Inadequately drained	INDR	length	metres	1	50
Foundation failure	FOUN	length	metres	1	50
Other	OTHR				
None	NONE				

1.2.16 Grass Bulbs and Wildflower Areas

Description	Code	Attribute	Units	Minimum	Maximum

1.2.17 Established Trees and Shrubs

Description	Code	Attribute	Units	Minimum	Maximum

1.2.18 Waterbodies

Description	Code	Attribute	Units	Minimum	Maximum

1.2.19 Special Ecological Measures

Description	Code	Attribute	Units	Minimum	Maximum

1.2.20 Litter and Refuse

Description	Code	Attribute	Units	Minimum	Maximum
Litter Grade C	LITC	area	sq metres	1	500
Litter Grade D	LITD	area	sq metres	1	500
Excessive muck. Need for sweeping/cleansing in Trunk Road channels motorway hardshoulders traffic Lanes verges central reserves footways and cycle facilities.	MUCK	length	metres	0	500
		area	sq metres	1	500

Description	Code	Attribute	Units	Minimum	Maximum
Need for herbicide. Growth of grass or other vegetation Between the channel and kerb which shall be likely to obstruct the flow of water or cause structural deterioration.	HERB	length	metres	0	200
		area	sq metres	1	200
Debris in traffic Lane	DBTL	length	metres	0	200
		area	sq metres	1	500
Debris in hard shoulder	DBHS	length	metres	0	200
		area	sq metres	1	500
Other	OTHR				
None	NONE				

1.2.21 Removal of Dead Animals

Description	Code	Attribute	Units	Minimum	Maximum
Carcass of dead animal	DEAD	No			
Other	OTHR				
None	NONE				

1.2.22 Road Restraint Systems (Vehicle and Pedestrian)

Description	Code	Attribute	Units	Minimum	Maximum
Rotten - Wood fence	RWDF	length	metres	1	50
Rotten - wood post (fence / barrier)	RWDP				
Corroded - metal (fence / barrier)	CMTF	length	metres	1	50
Corroded - metal post (fence / barrier)	CMTP				
Corroded - concrete fence	CCTF	length	metres	1	50
Corroded - concrete post	CCTP				
Missing - section of fence / barrier	MISS	length	metres	1	50
Accident damage	ACCD	length	metres	1	100
		height	metres	1	25
Damaged / deformed - fence / barrier	DAMM	length	metres	1	50
Loose panel	LOSP	number			
Loose anchor	LOSA	number			
Loose bolt	LOSB	number			
Loose tension bolt	CORT	length	metres	1	50
Incorrect or no tension (metal fence)	NTEN	length	metres	1	50
Safety fence - too high	SBTH	length	metres	1	999
		height	millimetres	0	999
Safety fence - too low	SBTL	length	metres	1	999
		height	millimetres	0	999
Loose tension bolts	LTEN				
Incorrect tension	CORT				
Other	OTHR				
None	NONE				

1.2.23 Fences Wall Screens and Noise Barriers

Description	Code	Attribute	Units	Minimum	Maximum
Rotten - Wood fence	RWDF	length	metres	1	50
Rotten - wood post (fence / barrier)	RWDP				
Corroded - metal (fence / barrier)	CMTF	length	metres	1	50
Corroded - metal post (fence / barrier)	CMTP				
Corroded - concrete fence	CCTF	length	metres	1	50
Corroded - concrete post	CCTP				
Missing - section of fence / barrier	MISS	length	metres	1	50
Accident damage	ACCD	length	metres	1	100
		height	metres	1	25
Damaged / deformed - fence / barrier	DAMM	length	metres	1	50
Loose panel	LOSP	number			
Loose anchor	LOSA	number			
Loose bolt	LOSB	number			
Loose tension bolt	CORT	length	metres	1	50
Incorrect or no tension (metal fence)	NTEN	length	metres	1	50
Not stockproof	NSTK	length	metres	1	50
Loose tension bolts	LTEN				
Incorrect tension	CORT				
Other	OTHR				
None	NONE				

1.2.24 Road Markings

Description	Code	Attribute	Units	Minimum	Maximum
Wear (for example erosion).	WEAR	length	metres	1	999
		% remaining	per cent	1	100
Spread.	SPRD	length	metres	1	30
		% of original	per cent	1	100
Colour	COLR	length	metres	1	100
		percentage	per cent	1	100
Initiate skid test	SKID	length	metres	1	30
Initiate retro-reflectivity measurement	RETR	length	metres	1	100
Missing node marker	MIRF				
Skid resistance test failure	SKIT	length	metres	1	30
		SRV		0	99
Retro-reflectivity test failure	RETT	length	metres	0	30
Other	OTHR				
None	NONE				

1.2.25 Road Studs

1.2.25.1 REFC & REFS codes shall be used to indicate the need for a specialist inspection

Description	Code	Attribute	Units	Minimum	Maximum
Loose “catseye” casing	LCAS	number		1	50
Loose “catseye” rubber	LCAR	number		1	50
Loose studs	LSTD	number		1	50
Initiate conspicuity test – “catseye”	REFC				
Initiate conspicuity test – stud	REFS				
Damaged “catseye”	DAMC	number		1	50
Damaged stud	DAMS	number		1	50
Missing “catseye”	MISC	number		1	50
Missing stud	MISS	number		1	50
Perished rubber	PRUB	number		1	50
Missing reflector	MISR	number		1	50
Conspicuity catseye test failure	REFF	number		0	50
Conspicuity stud test failure	REFT	number		0	50
Conspicuity catseye test failure	REFF	number		0	50
Other	OTHR				
None	NONE				

1.2.26 Road Traffic Signs

Description	Code	Attribute	Units	Minimum	Maximum
Initiate target distance measurement	TRGD				
Initiate legibility distance measurement	LEGD				
Initiate surface luminance check	SFLM				
Initiate surface colour check	SFCL				
Physical condition of fittings	COFT				
Physical condition of frame	COFR				
Physical condition of post	COPT				
Lamp on during day	LPON				
Lamp failure	LAMP				
Moving part malfunction. Refers to moving parts of secret and variable message signs	MOVP				
Electrical condition	COEL				
Exposed wiring	EXPW				
Surface corrosion	SFCO				
Accident damage	ACCD				
Loss of surface / paint covering	LOPT				
Obscured sign	OBSG				
Dirty sign	DIRT				
Missing	MISS				
Damaged. Damage other than accident damage	DAMG				
Pointing wrong way	RWAY				
Target distance test failure	TRGT	length	metres	0	200
Legibility distance (direct) failure	LEGF	length	metres	0	200
Surface luminance test failure.	SFLN				

Description	Code	Attribute	Units	Minimum	Maximum
Inadequate retro-reflectivity					
Surface colour test failure	SFCT				
Lamp failure	LAMP				
Moving part malfunction. Refers to moving parts of secret and variable message signs.	MOVP				
PECU failure	PECU				
Timeswitch failure	TMSW				
No electricity supply	NOSP				
No fuse	FUSE				
Electrical condition	COEL				
Exposed wiring	EXPW				
Other	OTHR				
None	NONE				

1.2.27 Road Traffic Signals

Description	Code	Attribute	Units	Minimum	Maximum
Equipment wiring and earth condition	EQWE				
Equipment cabinet condition	EQCB				
Condition of base seals	CBSL				
Presence of gas	PGAS				
Hardware physical condition	HPCD				
Condition of buttons / detectors	CBDT				
Condition of regulatory sign / illumination. Condition of regulatory signs associated with traffic signals and the condition of their illumination	CRSI				
Condition of pole wiring / earth	CPWE				
Alignment or obscuration. Alignment cleanliness and visibility of signal heads	ALOB				
Condition of loop / feeder	CLOF				
Audible circuit failure	AUDC				
Damaged	DAMG				
Signals stuck	STUK				
Lamp failure	LAMP				
Counter / loop damaged	CDAM				
Condition poles / caps / heads / boards	PLCD				
No data sheets	NDTA				
Difficult access to cabinet	ACES				
Faulty mast arm assembly	MAST				
Equipment wiring and earth condition	EQWE				
Condition of pole wiring / earth	CPWE				
No fuse	FUSE				
Audible circuit failure	AUDC				
No electricity supply	NOSP				
Controller failure	NOOP				

Description	Code	Attribute	Units	Minimum	Maximum
Speed assessment equipment failure	SPED				
Dimming unit failure	LDIM				
Phase times incorrect	TIME				
Red lamp monitor circuit fault	RLMC				
Link failure	LINK				
WAIT lamp failure	WAIT				
Push button failure	PUSH				
Other	OTHR				
None	NONE				

1.2.28 Road Lighting

Description	Code	Attribute	Units	Minimum	Maximum
Lighting failure	LAMP				
PECU failure. Photo-electric circuit failure	PECU				
Lamp on during day	LPON				
Time switch failure	TMSW				
Electrical condition.	ELCN				
Wiring deterioration	WDET				
Exposed wiring	EXPW				
Corrosion of columns	CCOR				
Need for tree pruning	NTPR				
Missing (door / lamp / bowl).	MISP	number		1	50
Damaged post / column. Damage to post or column other than accident damage	DAMG				
Loss of surface paint / coating	LOPT				
Obscured lamp	OBLP				
Accident damage	ACCD				
Physical condition of fittings	COFT				
No electrical supply	NOSP				
Lighting failure	LAMP				
PECU failure. Photo-electric circuit failure	PECU				
Time switch failure	TMSW				
Wiring deterioration	WDET				
No electrical supply	NOSP				
No fuse	FUSE				
Other	OTHR				
None	NONE				

1.2.29 Ice Sensors

Description	Code	Attribute	Units	Minimum	Maximum
Road sensor failure	ROSE				
Other sensor failure	OTSE				
Damage to cabinets	DAMG				
Road sensor failure	ROSE				
Other sensor failure	OTSE				

Description	Code	Attribute	Units	Minimum	Maximum
Processor failure	PROC				
Other	OTHR				
None	NONE				

1.2.30 Arrester Beds

Description	Code	Attribute	Units	Minimum	Maximum
Other	OTHR				
None	NONE				

1.2.31 Snow Poles

Description	Code	Attribute	Units	Minimum	Maximum
Missing snow pole	MISP	No		1	10
Damaged snow pole	DMSP	No		1	10
Other	OTHR				
None	NONE				

1.2.32 Traffic Control Barriers

Description	Code	Attribute	Units	Minimum	Maximum
Damaged gate	DGTC				
Mechanical/electrical failure	METC				
Other	OTHR				
None	NONE				

1.2.33 Removal of Graffiti

Description	Code	Attribute	Units	Minimum	Maximum
Presence of Graffiti	GRAF				
Other	OTHR				
None	NONE				

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SCHEDULE 7 PART 1

MANAGEMENT, INSPECTION AND CYCLIC MAINTENANCE

ANNEX 7.1/F – Earthwork Monitoring Requirements

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SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 1

MANAGEMENT INSPECTION AND CYCLIC MAINTENANCE

ANNEX 7.1/F – Earthwork Monitoring Requirements

Location	Frequency
M80 Earnock Street Cut	Slope stability monitor every 6 months with report once per year
M8 Stability at Bishopton (adjacent to W H Malcolm Tip)	Slope stability monitor every 6 months with report once per year
A76 Enterkinfoot (north of Thornhill)	Monitor slope stability at 6 month intervals and report once per year
A78 Chriswell Embankment (adjacent to IBM complex, Greenock)	Yearly Inspection and report

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