

**Section 278
Asda Breck Road
Liverpool**

Works Specification

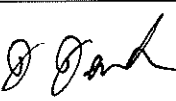
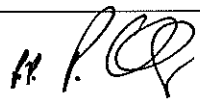
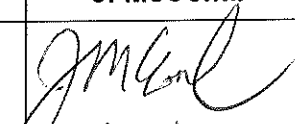
January 2014

REPORT CONTROL SHEET

PROJECT NAME: S278 Asda Breck Road

PROJECT TITLE: Works Specification

REPORT NUMBER: 00205011/WS/-

VERSION	DETAIL	PREPARED BY	CHECKED BY	APPROVED BY
-	ISSUE	D. Deakin	R. Armstrong	J. McComb
				
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CONTENTS	Page No
Preamble to the Specification	2
Appendix 0/1: Contract Specific Additional, Substitute and Cancelled Clauses, Tables and Figures in the Contract	7
Appendix 0/2: Contract Specific Minor Alterations to Existing Clauses, Tables and Figures in the Contract.	11
Appendix 0/3: List of Numbered Appendices referred to in the Specification and included in the Contract	12
Appendix 0/4: List of Drawings included in the Contract	64
Appendix 0/5: Not Used	

PREAMBLE TO SPECIFICATION

- 1.0 The Specification referred to in the Tender Documents shall be the "Specification for Highway Works", published by HMSO as Volume 1 of the Manual of Contract Documents for Highway Works, as modified and extended by the following:
 - (i.) Appendix 0/1: Contract specific Additional, Substitute and Cancelled Clauses, Tables and Figures;
 - (ii.) Appendix 0/2: Contract specific minor alterations to existing Clauses, Tables and Figures;
 - (iii.) The Numbered Appendices are listed in Appendix 0/3;
 - (iv.) Appendix 0/4 contains a list of the Contract Drawings
- 2.0 The relevant publication date of each page of the Specification for Highway Works is given in the Schedule of Pages and Relevant Publication Dates.
- 3.0 An Additional Clause as indicated by a suffix " **AR** " in Appendix 0/1 is a Contract-specific alteration.
- 4.0 A Substitute Clause as indicated by a suffix " **SR** " in Appendix 0/1 is a Contract-specific alteration.
- 5.0 A Cancelled Clause indicated by a suffix " **CR** " in Appendix 0/1 is a Contract-specific alteration.
- 6.0 In so far as any of the numbered Appendices may conflict or be inconsistent with any provision of the Specification for Highway Works the Numbered Appendices shall always prevail.
- 7.0 Any reference in the Contract to a Clause number or Appendix shall be deemed to refer to the corresponding Substitute Clause number or Appendix listed in Appendix 0/1 or 0/2.
- 8.0 Where a Clause is altered any original Table/Figure referred to in the Clause shall apply unless the Table/Figure is also altered. Where a Table/Figure is altered any reference in a Clause to the original Table/Figure shall apply to the altered Table/Figure.
- 9.0 Where a Clause in the Specification relates to work, goods or materials which are not required for the Works it shall be deemed not to apply.
- 10.0 Any Appendix referred to in the Specification which is not used shall be deemed not to apply.
- 11.0 Where a Clause in the Specification is prefixed by an # this indicates that this particular Clause has a substitute National Alteration for one or more of the Engineers of Scotland, Wales or Northern Ireland. Substitute or additional National Clauses shall be used within countries to which they specifically apply and they are deemed to replace corresponding Clauses in the main text of the Specification as appropriate. The substitute National Clauses are located at the end of the relevant Series together with the additional National Clauses of the Overseeing Departments.

- 12.0 Other than where references to the Overseeing Organisation are made in the context of the Overseeing Organisation granting statutory or type approvals, the roles and functions of the Overseeing Organisation shall be undertaken by the Engineers Representative.
- 13.0 Where the Specification requires the provision of documentation to the Overseeing Organisation for statutory or type approval such documentation shall be provided to the Engineer's Representative.
- (i.) If the specification is used in conjunction with a Contract under which the Contractor is responsible for the design of any part of the Permanent Works, the delegation of the roles and functions of the Overseeing Organisation as stated in paragraph 12 above shall be ammended as follows:
- (ii.) If any agreement, consent or approval required to be obtained from the Overseeing Organisation impacts on the health and safety of the general public, the environment or any property or equipment not owned or operated by the Contractor such consent, approval shall be obtained from the Engineer's Representative.
- (iii.) Where the Specification provides for the Overseeing Organisation to require a test, waive the requirement for a test or alter testing frequency, the party to whome the Overseeing Organisation's roles and functions have been ascribed by paragraph 12 above shall exercise such decisions in accordance with the Secretary of State's Requirements stated in the Contract.

SCHEDULE OF PAGES AND RELEVANT PUBLICATION DATES

Series/Appendix	Page Number	Publication Date
000	1	March 1998
000	3F	May 2005
000	2	November 2006
100	2	May 2001
100	W1F	May 2005
100	12 to 14, 20F	November 2005
100	1, 3 to 7, N1, N3	May 2006
100	8 to 9, 11, 15 to 19, N2, N4	November 2006
100	10, N5 to N6F	November 2008
200	1, 3F	May 2001
200	2	May 2004
300	1	May 2001
300	4	November 2002
300	2 to 3, 5 to 6F	May 2008
400	1 to 6, 8, 10 to 13F	November 2007
400	7, 9	November 2008
500	23 to 24, 26	November 2004
500	28F	May 2005
500	3, 22, N1F	May 2006
500	2, 5, 27	November 2006
500	6, 25	November 2007
500	1, 4, 7 to 21	November 2009
600	33	November 2003
600	2, 27 to 28, 30 to 32, 34 to 36, N1	November 2005
600	25 to 26	November 2006
600	42 to 49, 52 to 68F	November 2007
600	37, 50	November 2008
600	1, 3 to 24, 29, 38 to 41, S1 to S3F, N2 to N4F	November 2009
700	2 to 3, 5 to 6, N1, N3 to N5F	November 2006
700	4, N2	August 2008
700	1, 7 to 32F	November 2009
800	1 to 25F	November 2009
900	2 to 5, 9 to 22, 24 to 26, 28 to 67F	August 2008
900	1, 6 to 8, S1F	November 2008
900	23, 27	May 2009
1000	3, 5 to 6	November 2005
1000	1 to 2, 4, 7 to 15, 19 to 33F	May 2006
1000	16 to 18	November 2006
1100	1, 4F	November 2004
1100	2, N1F	November 2006
1100	3	August 2008
1200	5	May 2001
1200	2 to 3, W1F	August 2003
1200	1, 14 to 16F	May 2004
1200	4, 9 to 11, 13	May 2005
1200	12	November 2006
1200	6 to 7, N1 to N4F	November 2007
1200	8	May 2008
1300	N2F	November 2003
1300	3 to 4	November 2004
1300	1, 5 to 10, 12F	November 2005
1300	2, 11 and N1	May 2006

1400	2, N1F	May 2001
1400	1, 3 to 9F	May 2006
1500	7	May 2001
1500	2	February 2003
1500	3 to 4, 8 to 11, 13	November 2004
1500	1, 5 to 6, 12, 14 to 17F	November 2006
1600	1, 4 to 5, 9, 15, 17 to 18, 24 to 26,	March 1998
1600	29 to 31, 35, 38, 49F	
1600	2, 6 to 8, 10 to 14, 16, 19, 27 to 28,	November 2003
	32 to 34, 36 to 37, 39 to 42, 44 to	
	48	
	3, 20 to 23, 43	November 2005
1700	2 to 7, 10 to 15	May 2004
1700	8 to 9	May 2005
1700	1, 16 to 22F	May 2006
1800	1, 4, 6, 8 to 9	May 2004
1800	2 to 3, 5, 7, 10 to 12F	November 2005
1900	17	May 2003
1900	1, 5, 8 to 14, 16, 18 to 30F, S1 to S2F	May 2005
1900	6 to 7, 15	May 2008
1900	2 to 4	November 2008
2000	1, 3 to 4F	May 2001
2000	2	November 2004
2100	1, 4F	March 1998
2100	2	November 2003
2100	3	November 2005
2300	1	March 1998
2300	2 to 3F	May 2001
2400	1, 4, 7F	May 2005
2400	2	May 2006
2400	3, 5 to 6	May 2008
2500	1	May 2001
2500	2, 8, 11F	November 2003
2500	10	November 2004
2500	6 to 7, 9	May 2005
2500	5	May 2006
2500	3 to 4	November 2006
2600	1	March 1998
2600	2 to 4	November 2003
2600	5	November 2004
2600	6	May 2005
2600	7F	November 2006
3000	1, 4 to 7, 10, 12 to 17, 19, 22 to 27F	May 2001
3000	20	November 2004
3000	2 to 3	May 2006
3000	8 to 9, 11, 18, 21	May 2008
5000	1, 4 to 19F, S1F	May 2005
5000	2 to 3	November 2008
Appendix A	1 to 32F	May 2008
Appendix B	1	May 2006
Appendix B	2 to 7F	November 2006
Appendix C	1	May 2005
Appendix C	2F	November 2006
# Appendix D	N1F	March 1998
Appendix D (NI)	1F	May 2005

# Appendix E	1F	May 2005
Appendix E (NI)	N1F	May 2005
Appendix F	1 to 55F	May 2009
Appendix G	1F	May 2004
Appendix H	1	May 2004
Appendix H	2, 6 to 8F	November 2005
Appendix H	3 to 5	November 2006

**APPENDIX 0/1: CONTRACT-SPECIFIC ADDITIONAL, SUBSTITUTE AND
CANCELLED CLAUSES, TABLES AND FIGURES
INCLUDED IN THE CONTRACT**

LIST OF ADDITIONAL CLAUSES, TABLES AND FIGURES

Clause No.	Title	Written on Page No. Following
170AR	Care of Public Highway	8
171AR	Use of Site	8
172AR	Abatement of Nuisance	9
570AR	Raising and Lowering of Existing Covers and Gratings	9

LIST OF SUBSTITUTE CLAUSES, TABLES AND FIGURES

Clause No.	Title
N/A	N/A

LIST OF CANCELLED CLAUSES, TABLES AND FIGURES

Clause No.	Title
N/A	N/A

ADDITIONAL CLAUSES, TABLES AND FIGURES

SERIES 100 – PRELIMINARIES

Clause 170AR – Care of Public Highway

- 1.0 Subject and without prejudice to the Conditions of Contract, the Contractor shall:
- (i) take all reasonable measures necessary to avoid damage to the public highway;
 - (ii) be responsible for all repairs necessary as a consequence of his failure to comply with Sub-clause (i) of the Clause and shall submit to the Overseeing Organisation for approval his proposed method of repair.
- 2.0 Sections of carriageway closed during the course of the work shall be vigorously cleaned before they are re-opened to traffic.

Clause 171AR - Use of Site

- 1.0 The Contractor will be held responsible for maintaining the site and drains in a satisfactory condition until such time as he may complete the works. Should any of the drains become blocked by debris resulting from the Works, they are to be cleaned at the Contractor's expense.
- 2.0 All roads which are being used by the Contractor's, Sub-contractors' and suppliers' vehicles and plant shall be kept clean and free from debris, dirt or mud arising from or due to the carrying out of the Works and the Contractor shall take all necessary precautions to prevent grit, diesel oil and other contaminants being spilt onto verges and embankments. Should there be an occurrence of such spillage the Contractor shall take all necessary measures to make good the contaminated area immediately.
- 3.0 The Overseeing Organisation shall have the right to stop the Works if, after consultation with the Police, it is considered that mud or other materials deposited by the Contractors' or suppliers' vehicles onto the carriageway is creating a hazard to passing traffic.
- 4.0 The Contractor shall take due care to avoid damage to traffic signs, lighting columns, street furniture, carriageway surfacing, footways and verges not affected by the works and shall not allow vehicles to run or stand on the footways and verges. Any damage caused by the Contractor shall be reinstated at his own expense to the satisfaction of the Overseeing Organisation.
- 5.0 No unnecessary parking of vehicles will be permitted within restricted areas of trafficked highways.
- 6.0 A safety zone of minimum width of 0.5m shall be maintained between the work area and that part of the carriageway open to traffic, and employees and plant should not enter these safety zones except for the maintenance of the traffic management system. Material stockpiles shall not encroach into the zone.
- 7.0 When in possession of any part of the highway as a working area, the Contractor shall allow for the use of the working area by vehicles in an emergency and shall render assistance when required to do so by the Overseeing Organisation or the Emergency Service of question.
- 8.0 The Contractor shall obtain the approval of the Overseeing Organisation for the siting of all huts, stockpiles, etc.

- 9.0 The Contractor shall be responsible for the watching and lighting of his plant, equipment, materials and works, and in particular, plant and stockpiles parked/deposited within the work area.
- 10.0 The burning of waste and the tipping of debris or surplus materials on the site will not be permitted.

Clause 172AR – Abatement of Nuisance

- 1.0 Subject and without prejudice to the Conditions of Contract the Contractor shall:
- (i) advise the Overseeing Organisation of the measures he proposes to take to minimise disturbance to the general public and to the owners and occupiers of property adjacent to the works;
 - (ii) take measures to minimise airborne nuisance from fine material particles during construction of the Works. Such measures may include:
 - a. dampening of surfaces at the source of each nuisance to prevent its formation;
 - b. protection of the surface by the placing of a protective layer of surface dressing to Clause 919 or bituminous spray to Clause 920;
 - c. provision of a protective layer of acceptable material which meets the requirements of Class 2A or 2B;
 - (iii) ensure that existing highways used by him or any of his sub-contractors or suppliers of materials or plant, and any new diversion ways which are part of the Works or in the vicinity of the Works are kept clear of soil, mud, dirt and other debris which emanate from the works.

SERIES 500 – DRAINAGE AND SERVICE DUCTS

Clause 570AR – Raising and Lowering of Existing Covers and Gratings

- 1.0 Where necessary, covers, gratings and frames in existing footway and/or carriageway shall be raised to correspond with new footway and/or carriageway levels. The cover, grating or frame shall be carefully removed taking precautions to avoid damage to existing sewers, drains and services. The chamber or shaft shall be built up to the required level using not more than four courses or less than two courses of Class B Engineering Brickwork 225mm thick. Any step irons, safety chains, ladders, handholds and other fittings should be fitted. If required walls, roof and cover slabs should be constructed and any shafts built in in-situ concrete. The covers, gratings and frames shall be bedded on designation (i) mortar to the new level.
- 2.0 If it is necessary to lower the level of a cover, grating and frame, then, after carefully removing the cover, grating and frame, the brickwork to the shaft shall be broken out to the required level, taking precautions to avoid damage to existing sewers, drains and services. If required walls, roof and cover slabs should be constructed and any shafts built in in-situ concrete. The covers, gratings and frames shall be carefully laid on designation (i) mortar to the new level.

SUBSTITUTE CLAUSES, TABLES AND FIGURES

None Made.

**APPENDIX 0/2: CONTRACT SPECIFIC MINOR ALTERATIONS TO EXISTING
CLAUSES, TABLES AND FIGURES IN THE CONTRACT**

None Made.

APPENDIX 0/3: LIST OF APPENDICES REFERRED TO IN THE SPECIFICATION FOR HIGHWAY WORKS

The following is a complete list of the Numbered Appendices referred to in the Specification for Highway Works. Those not adopted are marked "Not Used". Those identified by the letters T or C shall be completed by the Tenderer or Contractor respectively.

SERIES 100 – PRELIMINARIES

1/1	Temporary Accommodation and Equipment for the Overseeing Organisation	Not Used
1/2	Vehicles for the Engineer	Not Used
1/3	Communication System for the Engineer	Not Used
1/4	Working and Fabrication Drawings	Used
1/5	Testing to be carried out by the Contractor	Used
1/6	Supply and Delivery of samples to the Engineer	Not Used
1/7	Site Extent and Limitations on use	Used
1/8	Operatives for the Engineer	Not Used
1/9	Control of Noise and Vibration	Used
1/10	Structures to be designed by the Contractor	Not Used
1/11	Structural Elements and other features to be designed by the Contractor	Not Used
1/12	Setting Out and Existing Ground Levels	Used
1/13	Programme of Works	Used
1/14	Payment Applications	Not Used
1/15	Accommodation Works	Not Used
1/16	Privately and Publicly owned Services and Supplies	Used
1/17	Traffic Safety and Management	Used
1/18	Temporary Diversions for Traffic	Not Used
1/19	Routing of Vehicles	Not Used
1/20	Recovery Vehicles for Breakdowns	Not Used
1/21	Information Boards	Used
1/22	Progress Photographs	Not Used
1/23	Risks to Health and Safety from materials or substances	Used
1/24	Quality Management System	Used
1/25	Temporary Closed Circuit Television System for the Monitoring of Traffic	Not Used
1/26	Temporary Automatic Speed Camera for the Enforcement of Mandatory Speed Limits at Roadworks	Not Used
1/27	Temporary Automatic Speed Camera for the Enforcement of Mandatory Speed Limits at Roadworks – Particular Requirements	Not Used

SERIES 200 - SITE CLEARANCE

2/1	List of Buildings etc. to be demolished	Not Used
2/2	Filling of Trenches and Pipes	Not Used
2/3	Retention of Material arising from Site Clearance	Used
2/4	Explosives and Blasting	Not Used
2/5	Hazardous Materials	Used

SERIES 300 - FENCING AND ENVIRONMENTAL BARRIERS

3/1	Fencing Gates and Stiles	Not Used
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SERIES 400 – ROAD RESTRAINT SYSTEMS (VEHICLE AND PEDESTRIAN)

4/1	Safety Fences and Safety Barriers	Not Used
4/2	Pedestrian Guardrails	Not Used

SERIES 500 - DRAINAGE AND SERVICE DUCTS

5/1	Drainage Requirements	Used
5/2	Service Duct Requirements	Used
5/3	Surface Water Channels and Drainage Channel Block	Not Used
5/4	Fin Drains and Narrow Filter Drains	Not Used
5/5	Combined Drainage and Kerb Systems	Not Used
5/6	Linear Drainage Channel Systems	Not Used
5/7	Thermoplastics Structural Wall Pipes and Fittings	Not Used

SERIES 600 – EARTHWORKS

6/1	Requirements for Acceptability and Testing etc. of Earthworks Materials	Not Used
6/2	Requirements for dealing with Class U2 Unacceptable Material	Not Used
6/3	Requirements for excavation, deposition, compaction (other than dynamic compaction)	Not Used
6/4	Requirements for Class 3 Material	Not Used
6/5	Geotextiles used to Separate Earthworks Materials	Not Used
6/6	Fill to structures and fill above Structural foundations	Not Used
6/7	Sub-formation and capping and preparation and surface treatment of formation	Not Used
6/8	Topsoiling	Used
6/9	Earthwork environmental bunds, landscape areas, strengthened embankments	Not Used
6/10	Ground anchorages, crib walling and gabions	Not Used
6/11	Swallow holes and other naturally occurring cavities and disused mine workings	Not Used
6/12	Instrumentation and monitoring	Not Used
6/13	Ground Improvement	Not Used

SERIES 700 - ROAD PAVEMENTS GENERAL

7/1	Permitted Pavement Options	Used
7/2	Excavation, Trimming and Reinstatement of Existing Surfaces	Used
7/3	Surface dressings Performance Specification	Not Used
7/4	Bond Coats, Tack Coats and Other Bituminous Sprays	Used
7/5	In-situ Recycling : The Remix and Repave Processes	Not Used
7/6	Breaking up or Perforation of Existing Pavement	Not Used
7/7	Slurry Surfacing incorporating Microsurfacing	Not Used
7/8	Not Used	
7/9	Cold-Milling (Planing) of Bituminous Bound Flexible Pavement	Not Used
7/10	Worksheet Pro Forma for Results of Testing for Constituent Materials in Recycled Coarse Aggregate and Recycled Concrete	Not Used
7/11	Overbanding and Inlaid Crack Sealing Systems	Not Used
7/12	Arrester Beds	Not Used
7/13	Saw-Cut and Seal Bituminous Overlays on	Not Used

7/14	Existing Concrete Pavements Preparation of Jointed Concrete Pavements Prior to Overlaying and Saw-Cutting and Seal of Bituminous Overlay	Not Used
7/15	Saw-Cut and Seal Existing Jointed Concrete Pavements	Not Used
7/16	Cracking and Seating of existing Jointed Un- reinforced Concrete Pavements and CBM Bases	Not Used Not Used
7/17	Cracking Plant and Equipment Progress Record	Not Used
7/18	Site Specific Details and Requirements for Cold Recycled Bitumen Bound Material	Not Used
7/19	Site Specific Details and Requirements for Recycled Cement Bound Material	Not Used
7/20	Site Specific Details and Requirements for Inducing Cracks	Not Used
7/21	Surface Dressing – Recipe Specification (Sheets 1 & 2)	Not Used
7/22	Repair to Potholes	Not Used
SERIES 1000 – ROAD PAVEMENTS – CONCRETE AND CEMENT BOUND MATERIALS		
10/1	Plant and Equipment for the Construction of Exposed Aggregate Concrete Surface	Not Used
SERIES 1100 - KERBS, FOOTWAYS AND PAVED AREAS		
11/1	Kerbs, Footways and Paved Areas	Used
11/2	Access Steps	Not Used
SERIES 1200 - TRAFFIC SIGNS		
12/1	Traffic Signs : General	Not Used
12/2	Traffic Signs : Marker Posts	Not Used
12/3	Traffic Signs : Road Markings and Studs	Used
12/4	Traffic Signs : Cones, cylinders, FTD's and other traffic delineators	Not Used
12/5	Traffic Signs : Traffic Signals	Not Used
12/6	Traffic Signs : Special Sign Requirements on Gantries	Not Used
12/70	Traffic signals – general	Not Used
12/72	Traffic signal detection	Not Used
12/73	Traffic signals – commissioning	Not Used
SERIES 1300 - ROAD LIGHTING COLUMNS AND BRACKETS, CCTV MASTS AND CANTILEVER MASTS		
13/1	Information to be provided when specifying lighting columns and brackets	Not Used
13/2	Column and bracket data sheets 1 & 2	Not Used
13/3	Instructions for completion of column and bracket data sheets	Not Used
13/4	Information to be provided when specifying CCTV masts	Not Used
13/5	Typical CCTV Mast Data Sheet	Not Used
13/6	Instructions for Completion of CCTV Mast Sheets	Not Used

SERIES 1400 - ELECTRICAL WORK FOR ROAD LIGHTING AND TRAFFIC SIGNS

14/1	Site records	Not Used
14/2	Location of lighting units and feeder pillars	Not Used
14/3	Temporary lighting	Not Used
14/4	Electrical equipment for road lighting	Not Used

SERIES 1500 - MOTORWAY COMMUNICATIONS

15/1	Communications	Not Used
15/2	WATC Duct Requirements	Not Used
15/71	Communications	Not Used

SERIES 1600 - PILING AND EMBEDDED RETAINING WALLS

16/1	General Requirements for Piling and Embedded Retaining Walls	Not Used
16/2	Pre-cast Reinforced and Pre-stressed Concrete Piles and Pre-cast Reinforced Concrete Segmental Piles	Not Used
16/3	Bored Cast-in Place Piles	Not Used
16/4	Bored Piles Constructed using Continuous Flight Augers and Concrete or Grout Injection through Hollow Auger Stems	Not Used
16/5	Driven Cast-in Place Piles	Not Used
16/6	Steel Bearing Piles	Not Used
16/7	Reduction of Friction on Piles	Not Used
16/8	Non-Destructive Methods for Testing Piles	Not Used
16/9	Static Load Testing of Piles	Not Used
16/10	Diaphragm Walls	Not Used
16/11	Hard/Hard Secant Pile Walls	Not Used
16/12	Hard/Soft Secant Pile Walls	Not Used
16/13	Contiguous Bored Pile Walls	Not Used
16/14	King Post Walls	Not Used
16/15	Steel Sheet Piles	Not Used
16/16	Integrity Testing of Wall Elements	Not Used
16/17	Instrumentation for Piles and Embedded Walls	Not Used
16/18	Support Fluid	Not Used

SERIES 1700 - STRUCTURAL CONCRETE

17/1	Concrete - Classification of mixes	Not Used
17/2	Concrete - Impregnation Schedule	Not Used
17/3	Concrete - Surface Finishes	Not Used
17/4	Concrete – General	Not Used
17/5	Buried Concrete	Not Used
17/6	Grouting and Duct Systems for Post-tensioned Tendons	Not Used

SERIES 1800 - STRUCTURAL STEELWORK

18/1	Requirements for structural steelwork	Not Used
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SERIES 1900 - PROTECTION OF STEELWORK AGAINST CORROSION

19/1	Protective Treatment for Lighting Columns	Not Used
19/2	Requirements for Other Works	Not Used
19/3	Form HA/P2 Paint Data Sheet	Not Used
19/4	Form HA/P3 Paint Sample Despatch List, Sheets 1 & 2	Not Used
19/5	General Requirements	Not Used

SERIES 2000 - WATERPROOFING TO STRUCTURES

20/1	Waterproofing for concrete structures	Not Used
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SERIES 2100 - BRIDGE BEARINGS

21/1	Bridge Bearing Schedule	Not Used
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SERIES 2200 – PARAPETS

22/1	Parapet Schedule	Not Used
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SERIES 2300 - BRIDGE EXPANSION JOINTS AND SEALING OF GAPS

23/1	Bridge Deck Expansion Joint Schedule	Not Used
23/2	Sealing of Gaps (Other than in Bridge Deck Expansion Joints)	Not Used

SERIES 2400 - BRICKWORK, BLOCKWORK AND STONEMASONRY

24/1	Brickwork, blockwork and stonework	Not Used
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SERIES 2500 - SPECIAL STRUCTURES

25/1	Requirements for corrugated steel buried structures	Not Used
25/2	Requirements for reinforced soil and anchored earth structures	Not Used
25/3	Requirements for pocket type and grouted Cavity reinforced brickwork retaining wall structures	Not Used
25/4	Environmental Barriers	Not Used
25/5	Requirements for Buried Rigid Pipes for Drainage Structures	Not Used

SERIES 2600 – MISCELLANEOUS

26/1	Ancillary Concrete	Not Used
26/2	Bedding Mortar	Not Used
26/3	Cored Thermoplastic Node Markers	Not Used

SERIES 2700 – ACCOMMODATION WORKS AND WORKS FOR STATUTORY UNDERTAKERS

27/1	General	Not Used
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SERIES 2900 – STREET FURNITURE

29/1	General	Not Used
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SERIES 3000 – LANDSCAPE AND ECOLOGY

30/1	General	Not Used
30/2	Weed Control	Not Used
30/3	Control of Rabbits and Deer	Not Used
30/4	Ground Preparation	Not Used
30/5	Grass Seeding, Wildflower Seeding and Turfing	Not Used
30/6	Planting	Not Used
30/7	Grass, Bulbs and Wildflower Maintenance	Not Used
30/8	Watering	Not Used
30/9	Establishment Maintenance for Planting	Not Used
30/10	Maintenance of Established Trees and Shrubs	Not Used
30/11	Management of Waterbodies	Not Used
30/12	Special Ecological Measures	Not Used

APPENDIX 1/4: WORKING AND FABRICATION DRAWINGS

- 1.0 The Contractor shall provide the Overseeing Organisation with working drawings and method statements relevant to the following items of work:

Series	Description of Work	Minimum period for submission of drawings
100	Traffic Safety and Management	See Appendix 1/17 & paragraph 3 below
1400	As Built Drawings	Two months after the completion of the Contract.

- 2.0 Plans shall show all relevant details for each element of the works. The Contractor shall submit written descriptions with the plans/drawings describing each stage of the work including any temporary work arrangements including:

- (a) Proposed plant
- (b) Access / Entry locations
- (c) Health and Safety precautions
- (d) Traffic Management including pedestrians and cyclists
- (e) Maintaining access to adjacent residential properties at all times
- (f) Pedestrian routes being provided and maintained at all times.

- 3.0 All drawings and method statements shall be submitted to and approved by the Overseeing Organisation prior to any work commencing on site. The Overseeing Organisation requires 7 days to approve/reject all submissions. The Contractor shall not construct any of the works until approval has been granted. The information shall comply with the requirements of Chapter 8 of the Traffic Signs Manual & Safety at Street Works and Road Works – A Code of Practice.

- 4.0 The Engineer may request additional method statements for minor operations during the Contract Period for which the criteria given in paragraph 2.0 shall apply.

- 5.0 Certain requirements of this Appendix may already be covered in the Health and Safety requirements of the Construction (Design and Management) Regulations 2007.

- 6.0 Method Statements Required:

Site specific method statements are required for:

- Traffic Management - Establishment and removal of traffic management including drawings:
 - Working in and adjacent to the highway – Live traffic.
 - Working in and adjacent to pedestrian footways / Interface with public including providing and maintaining safe routes for pedestrians at all times (drawings to be included).
 - Temporary/portable traffic lights.
- Accessing and Testing Live Electrical Systems/Supplies.
- Night working (if applicable).
- Manual Handling.
- Working at height.
- Concurrent site activities.
- Working around existing utility apparatus.
- Use of plant and machinery in restricted areas.
- Existing services.
- Use of herbicides and COSHH substances.

- Traffic signs removal and erection.
- Noise and Vibration
- Management of Waste.
- Leakages and Spills.
- Establishment and removal of traffic management including drawings.

APPENDIX 1/5: TESTING TO BE CARRIED OUT BY THE CONTRACTOR

- 1.0 Unless otherwise stated above, all testing by sample in this Appendix shall be carried out by the Contractor.
- 2.0 Tests comparable to those specified in this Appendix will be necessary for any equivalent work, goods and materials proposed by the Contractor (See Sub – Clause 105.4 of MCHW).
- 3.0 (N) Indicate that a UKAS or equivalent accredited laboratory sampling and test report or certificate is required.
- 4.0 Unless otherwise shown in this Appendix tests for work, goods or materials as scheduled under any one Clause are required for all such work, goods or materials in the Works.
- 5.0 Cube strength tests are not required for concrete complying with Clause 2602 of MCHW.
- 6.0 Unless otherwise shown in this Appendix test certificates for work, goods or materials as scheduled under any one Clause are required for all such work, goods or materials in the Works.

TABLE 1/5/5: TESTING DETAILS
SERIES 500: DRAINAGE AND SERVICE DUCTS

Clause	Works, Goods or Material	Test	Frequency of Testing	Test Certificate	Comments		
Series 500							
501	Pipes for drainage and service ducts						
	Asbestos-cement				Product certification scheme applies		
	Vitrified clay						
	Concrete PC/ SRC	not exceeding 900 mm dia					
	Concrete pre-stressed						
	Iron-cast						
	Iron-ductile						
	UPVC						
	GRP						
	Plastics						
	Corrugated steel				(Manufacturer's tests)	Required (AASHTO)	
	Corrugated steel bitumen protection						
	Concrete PC/SRC exceeding 900mm dia		Proof load Maximum load Chloride ion Cube strength (Manufacturer's tests)		Sub Clause 509.9	Required (AASHTO)	
		Other materials				BBA certification applies	
503	Pipe Bedding		Grading and fines content	1 per week (min of 3)	Required		
			Soluble sulphate content (N)				3 per source
			Oxidisable sulfides (OS) content and total potential sulphate (TPS) content (N)				3 per source
			Resistance to fragmentation (N)	1 per source			

TABLE 1/5/5: TESTING DETAILS
SERIES 500: DRAINAGE AND SERVICE DUCTS

Clause	Works, Goods or Material	Test	Frequency of Testing	Test Certificate	Comments
507	Chambers				Product certification scheme applies
	Pre-cast concrete			Required	
	Corrugated galvanised steel	(Manufacturer's tests)			Product certification scheme applies
	Manhole steps				
	Steel fitments				
	Covers, grates and frames				Product certification scheme applies
	Cover bolts				Quality Management scheme applies
508	Gullies and pipe junction				Product certification scheme applies
	Pre-cast concrete				
	Clay				
	Cast iron and steel				
509	Watertightness of joints	Air test	All pipelines with watertight joints	Required	
512	Backfill of pipe bays	Grading	1 per 50 tonnes (min of 3)	Required	
		Water-soluble sulphate (WS) contact (N)	3 per source		
		Oxidisable sulfides (OS) content and total potential sulphate (TPS) content (N)	3 per source		Minimum to allow for natural variability of sulphur compounds

TABLE 1/5/6: TESTING DETAILS
SERIES 600: EARTHWORKS

Clause	Works, Goods or Material		Test	Frequency of Testing	Test Certificate	Comments
Series 600						
601 631 to 637 640	Acceptable material				Required	
	Class	General Description				
	1	General granular fill	Grading/uniformity coefficient	Twice a week*		
			mc/MCV (N)	2 per 1000 m³ up to max of 5 per day*		
			SMC of chalk (N)	Twice a week*		
		1C only	10% fines value (N)	Weekly*		
	2	General cohesive fill	Grading	Twice a week*		
			mc/MCV/PL Undrained shear strength (N)	2 per 1000 m³ up to max of 5 per day*		
			SMC of chalk (N)	Twice a week*		
			Bulk density (pfa) (N)	2 per 1000 m³ up to max of 5 per day*		
	3	General chalk fill	mc (N)	2 per 1000 m³ up to max of 5 per day*		
			SMC (N)	Daily*		
	4	Landscape fill	Grading/mc/MCV	Daily*		
	5	Topsoil	Grading	Daily*		
	6	Selected granular fill	Grading/uniformity coefficient	1 per 400 tonnes*		
			PI/LL (N)	Daily*		
			10% fines value/SMC (N)	Weekly*		
			omc/mc, mc or MCV (N)	1 per 400 tonnes*		
			Organic matter/water soluble or total sulphate content (N)	Weekly*		
			pH/chloride ion content (N)	Weekly*		
			Resistivity (N)			
			Undrained and drained shear parameters (N)	2 per 1000M		

Clause	Works, Goods or Material		Test	Frequency of Testing	Test Certificate	Comments
601, 631 To 637, 640	Class 7	General Description				
		Selected cohesive fill	Grading/mc/MCV/ bulk density (N)	1 per 400 tonnes*		
			SMC of chalk (N)	Twice a week*		
			PI/LL (N)	Daily*		
			Organic matter/total or water soluble sulphate content (N)	Twice a week* or daily where sulphates are expected		
			Total sulphur content	Twice a week* or daily when sulfides are expected		
			pH/chloride ion content (N)	Weekly*		
			Resistivity (N)			
			Undrained and drained shear parameters (N)			
			Permeability (N)			
	8	Miscellaneous fill	mc/MCV (N)	Daily*		
602	Earthworks material beneath surface of a road or paved central reserve (i) Off site source (ii) On site source		Forest heave (N)	1 every four months*	Required	
609, 621	Geotextiles		Tensile load	1 per 400 square metres*	Required	
612	Compaction of Fills				Required	
		Method Compaction	Field Dry Density			
		End Product Compaction	Optimum MC (2.5KG rammer/Vibrating hammer Method) (N) Field Dry Density (N)	Each Class or sub-class of material. 1 per 200 tonnes		

TABLE 1/5/8: TESTING DETAILS
SERIES 800: ROAD PAVEMENTS – UNBOUND, CEMENT AND OTHER
HYDRAULICALLY BOUND MIXTURES

Clause	Works, Goods or Material	Test	Frequency of Testing	Test Certificate	Comments
Series 800					
801, 803, 804, 805, 806	General requirements for unbound mixtures for adjacent to cement bound materials, concrete pavements, structures or products	Water-soluble sulphate (WS) content (N)	1 per 400 tonnes or per location if less than 400 tonnes*	Required	
		Oxidisable sulfides (OS) content and total potential sulphate (TPS) content (N)	1 per 400 tonnes or per location if less than 400 tonnes*		
	Unbound mixtures beneath surface of road or paved central reserve	Frost heave (N)	1 per source*		
		Grading and fines content	1 per week*		
		Plastic index (N)			
		Resistance to fragmentation (N)	6 monthly*		
		Resistance to wear-micro- Deval test			
		Resistance to freezing and thawing (magnesium sulphate soundness) (N)	1 per source*		
		Water absorption			
		Volume stability of blast furnace slags	6 monthly		
		Volume stability of steel (BOF and EAF) slags	6 monthly		
		CBR (N)	1 per source and then monthly*		
		OMC/mc (N)			
		Density (N)			
		Water absorption (N)			

TABLE 1/5/9: TESTING DETAILS
SERIES 900: ROAD PAVEMENTS – BITUMINOUS BOUND MATERIALS

Clause	Work, Goods or Material	Test	Frequency of Testing	Test Certificate	Comments
Series 900					
901, 925, 937, 938, 943	Aggregates for bituminous material			Required	National quality management sector scheme applies
		Resistance to fragmentation (hardness)	Resistance to fragmentation (N)		
		Resistance to freezing and thawing (durability)	Soundness (N)		
			Water absorption (N)		
		Cleanliness	Sieve test (mass passing 63 micron sieve) (N)		Washing and sieving method to be used
		Shape	Flakiness index (N)		
		Blast furnace slag	Bulk density (N)		
			Soundness (N)		
			Dicalcium silicate disintegration (N)		
			Iron disintegration (N)		
		Steel slag	Bulk density		
			Volume stability (N)		
		Coarse aggregate for wearing courses	Resistance to polishing (PSV) (N)		
			Resistance to surface abrasion (AAV) (N)		

Clause	Work, Goods or Material	Test	Frequency of Testing	Test Certificate	Comments
	Binders for bituminous materials	Penetration (N)	1 per 750 tonnes	Required	National quality management sector scheme applies. Modified binders should have a BBA HAPAS Roads and Bridges Certificate. In the event that no such Certificates have been issued, then in the interim, only modified binders undergoing BBA assessment should be considered for approval by the Overseeing Organisation.
		Softening point (N)	1 per 750 tonnes		
904 to 907, 909 to 912, 914, 916, 925, 926, 937, 938, 942, 943, 948	Bituminous mixtures	Grading (N)	For Audit Test purpose only		National Quality management sector schemes apply.
		Binder content (N)			
929	Base and Binder Course Asphalt Concrete	In situ air void content (N)	1 per source*	Required	
		Refusal air void content (N) (PRD Test)			
		Binder Volume			
		Grading (N)			
		Binder content (N)			
921	Surface texture	BS EN 13036-1 Volumetric Patch Technique (N)	BS EN 13036-1	Required	
942	Thin Surface Course Systems	Binder drainage test	In accordance with DD 232: 2005		National quality management sector schemes apply. BBA certification (or equivalent) applies.

Clause	Work, Goods or Material	Test	Frequency of Testing	Test Certificate	Comments	
920	Bond coats, tack coats and other bituminous sprays					
		Binder	Product identification	1 per product per source	Required	Tests are expected to be repeated every two years
			Vialit cohesion	1 per product per source	Required	Tests are expected to be repeated every two years
			Accuracy of spread	1 for each binder and sprays per month	Required	Not more than 6 weeks prior to start of work and one per month
			Rate of spread	1 per week		
			Penetration at 25°C and 5°C (N)	Every manufactured batch		Manufacturer's QA test results may be submitted

TABLE 1/5/11: TESTING DETAILS
SERIES 1100: KERBS, FOOTWAYS AND PAVED AREAS

Clause	Work, Goods or Material	Test	Frequency of Testing	Test Certificate	Comments
Series 1100					
1101	Recast concrete kerbs, channels, edgings and quadrants	Bending strength	Minimum of 8 per 1000 units of each product (BS EN 1340)	Required	
1102	In situ asphalt kerbs	Grading	1 test per 500 metres laid	Required	
		Binder content			
1104	Recast concrete flags	Bending strength	Minimum of 8 per 1000 units of each product (BS EN 1339)	Required	
		Water absorption			
	Bedding				
	granular material				
	mortar				
1107	Concrete block paving	Bending strength	Minimum of 8 per 1000 units of each product (BS EN 1338)	Required	
1108	Clay pavers	Bending strength	Minimum of 8 per 1000 units of each product (BS EN 1344)	Required	
		Skid resistance	Minimum of 8 per 1000 units of each product (BS EN 1344)		

TABLE 1/5/12: TESTING DETAILS
SERIES 1200: TRAFFIC SIGNS & ROADMARKINGS

Clause	Work, Goods or Material	Test	Frequency of Testing	Test Certificate	Comments
Series 1200					
1202	Permanent traffic signs			Required	Quality management scheme applies. Certification that the traffic sign is capable of passing the tests in BS 873: Part 1 is required
1210	Holding down bolts and anchorages to bases of permanent bollards			Required	Certification that the holding down bolts and anchorages are capable of complying with the performance requirements of BS 873: Part 3 is required
1212	Road markings	Test specified in BS EN 1824			National Quality management and sector scheme applies.
				Required	Procedures are given in BS EN 1824
1214	Temporary cones, cylinders, FTDs and other delineators			Required	Certification that at least 1 in 500 of any batch of cones, cylinders, FTDs and other delineators to be used in the Temporary Works have passed the tests in Clause 1214 as appropriate is required
		Inductance			MCH 1540 is required

TABLE 1/5/14: **TESTING DETAILS**
SERIES 1400: **ELECTRICAL WORK FOR ROAD LIGHTING AND TRAFFIC**
SIGNS

Clause	Works, Goods or Materials	Test	Frequency of Testing	Test Certificate	Comments
Series 1400					
1421	Cable				Product Certification Scheme applies.
1424	Lighting Units	Tests specified in Clause 1424	Each network	Required	Product Certification Scheme applies Certification that the installation complies with BS 7671 (The IEE Wiring Regulations) is required
1424	Networks	Tests specified in Clause 1424	Each network	Required	Certification that the installation complies with BS 7671 (The IEE Wiring Regulations) is required

TABLE 1/5/26: TESTING DETAILS
SERIES 2600: MISCELLANEOUS

Clause	Works, Goods or Material	Test	Frequency of Testing	Test Certificate	Comments
Series 2600					
2601	Bedding mortar materials			Required for each batch	Certification in accordance with Clause 2601 is required
	Bedding mortar	Flow cone test	Each batch	Required	Laboratory tests
		Flow between glass plates			
		Compressive strength			
		Expansion test			
		Water absorption			
		Elastic stability	1 per source		
2604	Plastic coating to fencing posts, gates and ancillaries	Flow cone test Compressive strength	Each load		Site control tests
		Impact test Adhesion Retention of adhesion Salt spray Accelerated weathering (Manufacturer's tests)			Records of all tests to be available for inspection

APPENDIX 1/7: SITE EXTENT AND LIMITATIONS ON USE

1.0 Extent of site

- 1.1 The use of the site is limited to only the works indicated on the drawings listed in Appendix 0/4 and any limitations that may be imposed by the special requirements in relation to work undertaken by Statutory Undertakers.
- 1.2 The extent of the site is as indicated on Drawing No 00205011/700/01.

2.0 Limitations on Use

- 2.1 The contractor shall not use the site for any purpose other than for carrying out the work specified in this contract, and shall seek the approval of the Overseeing Organisation for the siting of all materials, spoil heaps, sheds, offices etc, necessary for the execution of the works.
- 2.2 The Contractor shall not store any materials on the carriageway or footway within or outside the site boundary unless written approval has been given by the Overseeing Organisation.
- 2.3 Throughout the course of the works the Contractor shall ensure the exclusion of the public from all working areas within the site. Fencing and hoardings should be secure and interlocking and should be approved by the Overseeing Organisation.
- 2.4 The Contractor shall maintain vehicular and pedestrian access to business/private properties at all times.

APPENDIX 1/9: CONTROL OF NOISE AND VIBRATION

- 1.0 The following contains extracts from the guidance note prepared by the Environmental Health and Trading Standards Service to assist contractors and developers in understanding the restrictions which apply to construction work to protect residents and businesses from high noise levels. Liverpool City Council have informally agreed that the following measures would be acceptable and these are given as a guide, however it is for the Contractor to decide whether to seek the Council's formal consent to his proposed methods of work and to the steps he proposes in order to minimise noise.

2.0 **Standard hours of work**

The permitted hours of work for activities which would be audible at the site boundary are:

Monday-Friday 8.00am-6.00pm

Saturday 8.00am-1.00pm

No working on Sundays or Bank Holidays

Exceptionally, consent for work outside these hours for activities which would be audible at the site boundary may be given after necessary consultation with Amey. Where a contractor identifies a need to work outside normal hours he should liaise as soon as possible with the Environmental Protection Unit to discuss his proposals and submit the appropriate information given in note 7 below.

The permitted hours of work given above are only in relation to activities which would be audible as per the Liverpool City Council's guidelines and is not the actual permitted hours of work on site. The actual permitted hours of work on site and any restrictions to which contractor must adhere to are given in Appendix 1/13, Programme of Works.

- 3.0 Contractors should ensure that the best practicable means are employed to minimise noise. British Standard 5228:Part1:1997 is approved code of practice for basic information and procedures for noise and vibration control.
- 4.0 Noise limits which should not be exceeded outside noise sensitive premises (i.e. façade levels) are as follows (adapted from Department of the Environment Advisory Leaflet AL72 and the World Health Organisation's 'Guidelines for Community Noise'):

Environment	Critical health effect	Sound level Leq, dB(A)	Time
Dwellings/offices	Speech intelligibility	75	0700-1900
Schools	Speech intelligibility	65	During class
Dwellings	Speech intelligibility	65	1900-2300
Dwellings	Sleep disturbance	45*	2300-0700

*or equal to ambient noise levels if these are higher than 45dB (A)

- 5.0 The Control of Pollution Act 1974 gives the local authority power to serve a notice under section 60 imposing requirements as to the way in which works are carried out. This may specify plant to be used, hours to be worked and noise levels to be achieved.

6.0 Section 61 enables anyone who intends to carry out works to apply to the local authority for consent. An application for consent must contain particulars of the works, the method by which they are to be carried out and the steps proposed to be taken to minimise noise resulting from the works.

7.0 Where a contractor identifies a need to work outside normal hours he should liaise as soon as possible with the Environmental Protection Unit to discuss his proposal. Before approval can be given to such work, the following information must be provided for the works:

- i. Location.
- ii. Need for out of hours working.
- iii. Duration.
- iv. Location of noise sensitive premises affected.
- v. Details of proposed consultation with occupiers of noise sensitive premises.
- vi. Working Methods.
- vii. Mitigation measures to minimise noise.

For further information, contact:

Environmental Protection Unit of the Environmental Health and Trading Standards. Telephone 0151 225 4955 or 0151 225 4707 or e-mail environmental.health@liverpool.gov.uk

8.0 The Contractor shall ensure that all vehicles, plant and machinery used during the operations are fitted with effective exhaust silencers and that all parts of such vehicles, plant and machinery are maintained in good repair and in accordance with the manufacturer's instructions and are so operated to minimise noise emissions.

9.0 The environmental requirements have been included as an appendix within the Pre Construction Health & Safety Information Pack, the contractor is to read this and take necessary steps and actions as identified within the review.

10.0 The noise levels scheduled below for periods outside the normal working hours will be permitted when consent has been given to exceptional work.

Schedule		Total Noise Levels at Control Stations		
Period	Hours	Ambient Noise Level, Leq measured at Control Station: dB(A)	Period of Hours over which Leq is applicable	Maximum Sound Level (see Note (iv) below) measured at Control Station: dB(A)
Mondays to Fridays	0800 to 1800	65	10.0	55

11.0 Only sound reduced compressors shall be used, and any equipment or panels fitted by the manufacturers for the purpose of the reduction of noise shall be maintained and operated so as to minimise the emission of noise. Any pneumatically operated percussive tools shall be fitted with mufflers or silencers which shall be kept in good repair.

12.0 The engines of vehicles and plant which will be out of use for a period exceeding 15 minutes shall be turned off, or where this is impractical, shall be throttled back to a minimum.

- 13.0 The Contractor shall be responsible for liaising with local residents and traders who may be affected by the works.
- 14.0 The Contractor shall also comply with all the requirements of the Health and Safety Authority and the following Acts:
Environmental Protection Act 1990
Clean Air Act 1993

APPENDIX 1/12: SETTING OUT AND EXISTING GROUND LEVELS

1.0 Setting out details for the proposed works is shown on Drawing No 00205011/700/01.

Drawing scaling and taped setting out will not be accepted as an alternative to the use of co-ordinate data provided.

2.0 All setting out details shall be agreed with the Overseeing Organisation on site.

APPENDIX 1/13: PROGRAMME OF WORKS

1.0 Programme of Works

- 1.1 The Contractor shall provide the Overseeing Organisation with a Programme of Works at least 14 days prior to the starting date. The Contractor shall provide the Programme of Works in the form of a Bar Chart showing anticipated work, which shall identify the Critical Path to completion. It shall show the level of detail appropriate to each stage of the works and all activities and restraints each of which, shall be given a short title.
- 1.2 The programme of works must be based around the Contractor's Traffic Management arrangements and must fully account for the constraints identified below.
- 1.3 The Contractor will be required to secure the approval of Liverpool City Council's Network Coordination Team (NCT) via the Engineer to the proposed Programme of Works (and traffic Management Arrangements) prior to the commencement of any works on site.

2.0 Schedule of Constraints

- 2.1 No Saturday, Sunday or Public Holiday working will be permitted unless detailed otherwise within the Contract or agreed with the Overseeing Organisation.
- 2.2 The Contractor will only be permitted to work on one footway at a time, and must complete all the works to the satisfaction of the Overseeing Organisation prior to commencing the opposite footway.
- 2.3 The Contractor must ensure a safe route for pedestrian and cyclists is maintained at all times, throughout the works.
- 2.4 The Contractor shall take the requirements of the Contract into account when programming the works. Particular attention is drawn to:
- The requirements of Appendix 1/4
 - The requirements of Appendix 1/7
 - The requirement of Appendix 1/9
 - The requirements of Appendix 1/17
 - The requirements of Appendix 1/18
- 2.5 The Contractor should endeavour to minimise the number and extent of temporary road closures needed to carry out the works.
- 2.6 Where the Contractor's Traffic Management arrangements involve the temporary closure of any road or highway, a Temporary Traffic Regulation Order (TTRO) will be required. The Contractor must apply in writing to the address below for all TTRO's. A period of 6 weeks is required to process the TTRO. The Contractor must bear the cost of the TTRO advertisement, (typically £2073.75 exclusive of VAT per advert).
- Ian Wiggins
Tel: 0151 233 4657
Liverpool City Council
Highways Management Regeneration
4th Floor Millennium House
60 Victoria Street, Liverpool L1 6JF
- 2.7 Prior to any works commencing on site the Contractor must ensure that the relevant

Highway Opening Notices, under Section 50 of the New Roads and Street works Act are in place. The Notice must be served via the Council's Term Maintenance Contractor, (Amey). The Contractor must bear the cost of serving the Section 50 Notice, (typically £1125) and must contact Amey to establish how many S50 notices will be required for the scheme.

The Contact details of Amey–Liverpool are listed below:

Geoff Keight
Tel: 07568113018
Amey LG
Newton Road,
Liverpool, L13 3HS

Please Note: A Section 50 Licence must be applied for at least **3 months** prior to the commencement of the works. In addition to a Section 50 Licence a Section 58 Licence is also required. A Section 58 Licence must be applied for at least **3 months** in advance of a Section 50 License. In order to obtain a Section 58 License please contact:

Dawn Connick
Tel: 0151 233 2737
Liverpool City Council
Highways Management Regeneration
4th Floor Millennium House
60 Victoria Street, Liverpool L1 6JF

- 2.8 The Contractor must gain the approval of LCC (NCT), Amey Liverpool's Traffic Systems Manager prior to using any temporary Traffic Signals on the Highway. Similarly approval is required prior to making any adjustment to existing Traffic signals. The Contractor is strongly recommended to engage the Systems Manager when developing the detailed Traffic Management proposals, as the existing traffic signal arrangement can be remotely manipulated to assist in the site works. The contact details are listed below:-

Ian Lancaster
Tel: 0151 2374241
Traffic Systems Manager
Amey
1st Floor, Station House,
Mercury Court
Tithebarn Street,
Liverpool L2 2QP
Tel: 0151 237 4241
Traffic Systems Control Room: 0151 237 4260

- 2.9 The Contractor is responsible for making arrangements with Statutory Undertakers any work that needs to be undertaken by them or their Contractors.

Contact details for the Utility companies are provided in Appendix 1/16.

- 2.10 The construction phase Health and Safety Plan along with the TM proposals including providing and maintaining safe routes for pedestrians with drawings, method statements should be submitted along with the returned quotation.

- 2.11 The Contractor must ensure that appropriate welfare facilities will be in place before people start work on site. The Contractor shall demonstrate in the construction phase plan how the contractor will deal with the provision of welfare facilities for staff. The Works Order cannot be issued until:
- a Information on welfare facilities for staff is provided and the construction phase Health and Safety Plan, TM proposals and method statements is approved by the CDM Co-ordinator.
 - b The contractor also must seek and receive NCT Highway Occupancy and Traffic Management approval prior to any works commencing on Highway Adopted land.
- 2.12 The Contractor is responsible for making arrangements with the Statutory Undertakers and all Public Authorities concerned, for phasing into his Programme of Works all outstanding elements of work which needs to be done by them or their Contractors with the Works.
- 2.13 The contact details of the Statutory Undertakers who have equipment in the vicinity of the adopted Highway land is given in Appendix 1/16.
- 2.14 The Contractor must liaise closely with Statutory Undertakers' at an early stage in order to phase their works into his Programme of Works and allow time in his programme for the identification of pipes and cables exposed during the works.
- 2.15 The Contractor shall consult with adjacent properties affected by the works together with associated Traffic Management regarding access and egress.
- 2.16 The Contractor will only be allowed to store material on the highway after being given written approval from Liverpool City Council's Highways Engineer. The contact details are listed below:
- Ian Wiggins
Tel. 0151 233 8286
Highways Management
PO Box 88
Municipal Buildings
Dale Street
Liverpool, L2 2DH
- In the event that materials are stored away from the works, the additional time should be included in the programme. The Contractor should also note that it is his responsibility to clear unwanted materials from the highway on a daily basis as no waste materials are allowed to be stored overnight.
- 2.17 In programming the Works, the contractor shall take note of the following constraints and requirements which shall be incorporated in his Outline Programme.
- 2.18 In connection with any traffic safety and control measures or temporary diversions of traffic proposed by the Contractor and approved by the Engineer and which require temporary traffic orders, it is the Contractor's responsibility to obtain such orders from the Local Authority.
- 2.19 Any proposals for temporary traffic light (3 way or more) working arrangements shall be submitted to the Traffic Signal Engineer at the Pre-Commencement Meeting.

- 2.20 Adequate lighting to the approval of the Engineer shall be provided for any construction work allowed to be carried out during the hours of darkness. The Contractor shall not allow the existing lighting system within the Works to be interrupted until such time as the new lighting system for that length of road is commissioned. No lighting source shall be disconnected without the written approval of the Engineer.
- 2.21 The Contractor must obtain approval for all proposed traffic management drawings from LCC (NCT). For details of full procedure refer to Appendix 1/17
- 2.22 All surplus excavated material shall be disposed of to a licensed tip and the Contractor shall inform the Engineer in writing of the location and licence number of the tip he proposes to use 48 hours before material is taken from the site.
- 2.23 The Contractor will recognise the degree of uncertainty attached to the figures given and constraints imposed by the Statutory Undertakers and other bodies owing to the number of influencing factors pertaining, and must programme his works so as to place least reliance on them, and so avoid hindrance to his own planned activities.
- 2.24 Any areas of working must be fully fenced off and signed in such a manner to clearly indicate to both pedestrians and vehicles the intended route.

APPENDIX 1/16: PRIVATELY AND PUBLICLY OWNED SERVICES OR SUPPLIES

1.0 General

- 1.1 Statutory Undertakers drawings showing the approximate location of underground equipment are available for inspection at the offices of Amey during normal office hours. Please contact Jay McComb on 0151 728 1666 ext 67234 to arrange such inspections. The list of Statutory Undertakers returns is provided in appendix 0/4.
- 1.2 The Contractor shall take all practicable steps to avoid damage to Statutory Bodies' services and/or apparatus. He shall, before opening up any section of the Site for construction operations, site accommodation or any other purpose, ascertain the location of all existing services and apparatus by reference to the drawings, the Statutory Bodies and by excavation of trial holes. He shall also give the Overseeing Organisation at least one day's notice of his intention to undertake work involving the exposure of such services and apparatus.
- 1.3 The Contractor shall, when working in the vicinity of British Gas distribution apparatus, comply with the "General Conditions and Precautions to be Taken When Carrying out Works Adjacent to British Gas Distribution Apparatus", as issued by British Gas Transco.
- 1.4 The Contractor shall, when working in the vicinity of British Gas high pressure mains, comply with the following publication, as issued by the British Gas Corporation:

"British Gas Engineering Standard PGC.PS/SSW2, Code of Practice for Safe Working in the Vicinity of British Gas Transmission Pipelines and Associated Installations Operating at Pressures in Excess of 7 Bar".
- 1.5 The Contractor shall, when working in the vicinity of underground cables, comply with "Recommendations on the Avoidance of Danger from Underground Cables" as issued by the National Joint Utilities Group.
- 1.6 The Contractor should note that his responsibilities under Clause 1.5 include above ground plant such as telegraph poles and street lighting columns and the stability thereof.
- 1.7 No warranty is given that all "Statutory Undertakers'" apparatus is shown on the Contract drawings or drawings available for inspection. In particular, no service connections to individual properties are shown. The Contractor should confirm or otherwise the accuracy and veracity of all such information.

- 1.8 The names, addresses and telephone numbers of the Authorities serving in the locality are listed below. No Special Requirements are provided as part of this specification. It is the Contractors responsibility to contact any Statutory Undertakers to obtain their Special Requirements.

British Gas Transco Gas Yard Banks Road Garston Liverpool L19 8HY	Telephone No: Facsimile: Contact	0151 728 1974 0151 494 2260 Phil Janes
S P Power Systems Ltd Data Management, Prenton Way, North Cheshire Trading Estate, Prenton. CH3 3ET.	Telephone No: Facsimile: Contact	0151 609 2470 0151 609 2029 No named contact
United Utilities Map Services Direct Stephen's Way Goose Green New Town House Wigan WN3 6PJ	Telephone No: Facsimile: Contact	0870 7510101 0870 7510102 No named contact
British Telecommunications plc Incoming Notice Reception PP 4048 Telecom House Trinity Street Hanley Stoke on Trent ST1 5ND	Telephone No: Facsimile: Contact	0800 800 865 01782 204846 Paul Wareing
Virgin Media Access Network Planning Diversionary Works Team Unit 7 Bothwell Park Industrial Estate Uddingston G71 6NZ	Telephone No: Facsimile: Contact	01772 903360 Tim Clark
Cable & Wireless c/o W. S. Atkins NRSWA Team P. O. Box 290 220 Aztec West Park Avenue Almondsbury Bristol BS32 4SY	Telephone No: Facsimile: Contact	01454 288808 0870 2403012 No named contact
Your Communications Streetworks Section Hathersage Road Chorlton-on-Medlock Manchester M13 0EH	Telephone No: Facsimile: Contact	0161 609 7763 0161 609 7284 No named contact

Swedia Networks U.K. Ltd. Swedia House Prospect Place Fengate Peterborough PE1 5XG (representing Telia who have cables in ducts owned by Your Communications)	Telephone No: Facsimile Contact	01733 865100 Mick Bellamy (01733 865258)
Amey Consulting Liverpool Urban Traffic Control West House Exchange Station Tithebarn Street Liverpool L2 2Q	Telephone No: Contact	07730196206 Ian Lancaster
Amey LG Street Lighting Newton Road Liverpool L13 3HS	Telephone No: Contact:	07896427102 Robert Ferguson ,
Energis Plant Enquiries National Grid Wireless Wireless House Warwick Technology Park Heathcote Lane Warwick CU34 6DD	Telephone No: Facsimile: Contact:	01926 416236 08702 419887 No named contact
Thus Plc 1-2 Berkeley Square 99 Berkeley Street Glasgow G3 7HR	Telephone No: Facsimile: Contact:	0141 5671234 0141 5663010 Gerry Campbell
Fujitsu Telecommunications Ltd Solihull Parkway Birmingham Business Park Birmingham B37 7YU	Telephone No: Facsimile: Contact:	0121 7176065 0845 8500115 No named contact
Easynet Telecom 70 Buckingham Avenue Slough SL1 4PN	Telephone No: Facsimile: Contact:	01753 714177 020 70323160 No named contact
Network Rail 100 Warfside Street The Mailbox Birmingham B1 1RT	Telephone No: Facsimile: Contact:	0121 345 3348 0121 345 4017 Lindsey Harland
Royal Mail Cheshire and Merseyside	Telephone No:	07725 201408

Widnes Delivery Office
3 Widnes Road
WA8 6AA

Facsimile:
Contact:

Geoff Simpkin
Dave Miley
dave.miley@royalmail.com
Derek O'Hagan
derek.o'hagan@royalmail.com

- 1.9 All C2 information received from the Statutory Undertakers will be forwarded to the Developer.
- 1.10 The Contractor is to ascertain the exact position of all services by liaising with the relevant Authorities and undertaking trial holes prior to any excavation works. Safe excavation techniques are to be employed.
- 1.11 Please note that diversionary works are envisaged as a result of the scheme proposals. The Statutory Undertakers affected by the proposed works are being consulted via a C3 process, any correspondence received will be forwarded to the Developer at the earliest opportunity.

APPENDIX 1/17: TRAFFIC SAFETY AND MANAGEMENT

1.0 General

- 1.1 The Contractor will be responsible for Traffic Management and Traffic Safety throughout the construction of the Works. The Principal Contractor must ensure a safe route for pedestrian and cyclists is maintained at all times.
- 1.2 The Contractor will be required to produce detailed drawings to illustrate his Traffic Management proposals for submission to the Liverpool City Council Network Co-ordination Team (NCT). The Contractor will be required to liaise with the Network co-ordination Team discuss the proposals in detail. NCT approval must be obtained before the implementation of any Traffic Management Arrangements.
- 1.3 The Contractors' submission to NCT will include the following details:-
- Drawings
 - Method Statements
 - Programme and Phasing Details
 - Staff Contact Details
 - Emergency Contact Number

Drawings shall show all relevant details for each element of the works. The Contractor shall submit written descriptions with the plans describing each stage of the work including any temporary work arrangements including:

- (a) Proposed plant
- (b) Access / Entry locations
- (c) Health and Safety precautions
- (d) Traffic Management including pedestrians and cyclists
- (e) Maintaining access to adjacent residential properties at all times
- (f) Pedestrian routes being provided and maintained at all times.

The Contact Details for NCT are:-

Ian Wiggins
Liverpool City Council
Highways Management Regeneration
4th Floor Millennium House
60 Victoria Street
Liverpool Direct L2 2QP

- 1.4 All systems of temporary signing, coning and barriers required to define working areas and direct traffic should be developed in accordance with the relevant recommendations outlined in Chapter 8 of the Traffic Signs Manual and "Safety at Street Works and Road Works" – A Code of Practice, (published by the Department for Transport).
- 1.5 A minimum of one lane, with minimum width of 3.25m min, in each direction must be maintained as far as possible and always at peak hours. One way working arrangements will only be permitted by written agreement with the Overseeing Organisation and NCT approval. The Contractor must maintain a minimum footway width of 2.0m at all times on all footways open to pedestrians.
- 1.6 A Safety Zone 0.5m must be maintained at all times between the running lanes and

Work Areas. The Safety Zone must be clear of plant and materials at all times and no work must be carried out from within the Safety Zone.

- 1.7 It is the Contactor's responsibility to obtain all Temporary Traffic Regulation Orders necessary to carry out the works. Contact details together with lead in periods are provided in Appendix 1/13.
- 1.8 It is the Contactor's responsibility to obtain all Temporary Traffic Regulation Orders necessary to carry out the works. Contact details together with lead in periods are provided in Appendix 1/13.
- 1.9 Traffic Management drawings/layouts shall be submitted to the Engineer in the form of auto cad drawings at a scale of no less than 1:500 based on Ordnance Survey tiles. All Traffic Management drawings shall identify the proposed access/egress points within the traffic management for approval by the Engineer.

2.0 Programme

- 2.1 The Traffic Management proposals should clearly accommodate the programming constraints outlined in Appendix 1/13 and should accurately cross reference with the phasing proposals and the Programme of Works.
- 2.2 The proposals should clearly accommodate the programming constraints outlined in Appendix 1/13 and should accurately cross reference with the phasing proposals and the Programme of Works.
- 2.3 The proposals shall clearly show the following details, as appropriate to the implementation of the works:
 - (a) Phasing of the Works, including interim phases for establishment of traffic management proposals.
 - (b) Use of temporary traffic signals.
 - (c) Width of lanes or widening, coning, lighting and edge protection arrangements.
 - (d) Working areas and safety zones.
 - (e) Working access and egress Points.
 - (f) Location and type of traffic signs and road markings.
 - (g) Location of pedestrian routes and details of associated temporary signs.
 - (h) The work to be carried out.
 - (i) Arrangements for delivery of equipment and material.
 - (j) Temporary Concrete barriers
 - (k) Measures to prevent unauthorised use of the access outside of working hours.
 - (l) Relocation of Bus Stops.
 - (m) Notification of works and details of alternative arrangements for crossing during works.
 - (n) Location of welfare facilities.
- 2.4 With respect to the NCT approval requirements, the Principal Contractor proposals to NCT shall show details on the use of any temporary traffic signals.

3.0 Traffic Signs

3.1 All temporary signs shall be:

- (a) 1200mm size or diameter
- (b) Reflectorised - Class 1 material
- (c) Mounted at the following heights above ground level to the underside of the sign :-

3 metres - on or adjacent to cycle tracks or footways
1.5 metres - all other locations

3.2 All signs shall comply with The Traffic Signs Regulations and General Directions 2002. Temporary traffic signs shall be mounted on existing posts or lighting columns where possible. Otherwise they shall be mounted on appropriate supports. Any external ballasting of signs shall consist of fine granular material contained in a sack which will disperse on impact.

3.3 The Contractor shall ensure that prior to removing his Traffic Management System, all coned off areas shall be cleaned, swept etc to the satisfaction of the Engineer.

4.0 Traffic Safety and Control Officer

4.1 Prior to the starting date, the Contractor shall appoint a senior responsible person, experienced in the operation of significant traffic management systems to act as Traffic Safety and Control Officer in accordance with Clause 117.19 of the Specification for Highway Works. He shall also appoint a responsible person to act as his deputy. Names, addresses and telephone numbers (24 hour contact) shall be forwarded to the Overseeing Organisation prior to the starting date. The Traffic Safety and Control Officer or his nominated deputy shall be on site at all times during the works and shall be available outside the normal working Hours. They shall ensure that the established system of traffic management is adequately inspected and maintained.

4.2 The Traffic Safety and Control Officer (TSCO) shall be responsible for:-

- (a) liaison with the Overseeing Organisation and the Police in all matters relating to traffic management and to ensure that the requirements of Clause 117 of the Specification for Highway Works and this Appendix are complied with.
- (b) the management of traffic during periods when traffic restrictions are necessary and ensuring that all traffic management requirements are met.
- (c) ensuring the safe working of plant, machinery and personnel and that all personnel engaged on the works are aware of the Contractor's obligations and duties in respect of site safety when working on live highways.
- (d) immediately notifying the Police of any accidents or emergencies.

4.3 The TSCO is required to coordinate and chair a pre-commencement Traffic Management Meeting with Merseyside Police, Amey, Mersey Travel and Liverpool City Council.

5.0 Emergency Procedures

- 5.1 The Contractor shall supply to the Overseeing Organisation and the Police the names and telephone numbers of personnel, for use in case of emergency outside normal working hours.

6.0 Excavation in the Carriageway and Temporary Surfaces

- 6.1 Where steel road plates are used over excavated trenches in the carriageway they must be firmly bolted to the carriageway and bituminous surface course material used to form a ramp on all sides to the satisfaction of the Engineer. The ramp shall not be greater than 40mm high from the surrounding carriageway and the bituminous ramp shall not be less than 0.5m long. The appropriate warning signs shall be erected during these periods.
- 6.2 All carriageway areas which have been planed shall be thoroughly cleaned of loose debris prior to being opened to traffic. Where applicable, advanced signing shall be provided where ramps and raised areas have been formed. Planed areas shall be re-surfaced within 2 weeks of the planing operations.
- 6.3 Longitudinal steps in the carriageway surface will not be permitted.

7.0 Street Lighting

- 7.1 The Contractor shall maintain as a minimum, the existing standard of street lighting throughout the Contract Period.

8.0 Storing / Loading / Unloading Materials and Plant

- 8.1 Materials shall not be stored on the carriageway. All materials shall be secured from the general public at all times.
- 8.2 The Contractor shall ensure that plant/vehicles within working areas do not obstruct visibility at road junctions, pedestrian crossing points and bus stops.
- 8.3 The Contractor shall submit details of the locations where he proposes to unload and load materials. He shall ensure that all appropriate signs and cones are in place prior to the operation.

9.0 Damage to Apparatus

- 9.1 Where Amey's Maintenance Contractor is required to attend to repair Traffic Signals as a direct result of damage caused by Contractor. Amey shall on its discretion, charge the Contractor.

APPENDIX 1/21: INFORMATION BOARDS

- 1.0 Two weeks prior to any construction work commencing on site, the contractor is to erect the following number of information boards at locations to be agreed on site with Engineer.

Whitefield Drive 2 no.
- 2.0 The information boards are to advise the public of the works. The board must give a start date and a completion date for the works.
- 3.0 For further information regarding information boards, the contractor's attention is drawn to Drawing No. 00205011/100/01

APPENDIX 1/23: RISKS TO HEALTH AND SAFETY FROM MATERIALS AND SUBSTANCES

1.0 Restrictions in relation to working practices

1.1 Work shall be curtailed where wind causes spreading of hazardous deposits. The contractor shall not cause dust, fumes, or smoke from the following operations:

- Removal of thermoplastic white lines
- Milling bituminous surfacing
- Sweeping of pavements

1.2 The free-floating dust shall be kept to a minimum and if required by the Engineer shall be dampened with water sprays.

1.3 All material stockpiles should be covered to prevent the generation of dust.

1.4 The contractor shall take all measures necessary to prevent spillage on to the carriageway.

2.0 Monitoring to be undertaken by Contractor

2.1 The contractor shall monitor fumes produced adjacent to public areas. All proprietary products shall be used strictly in accordance with the manufacturer's instructions.

Refer to the Pre-tender Health and Safety Plan and Risk Assessment for further information.

APPENDIX 1/24: QUALITY MANAGEMENT SYSTEM

1.0 Method Statements are to be supplied for the following works:-

- Traffic Management - Establishment and removal of traffic management including drawings:
 - Working in and adjacent to the highway – Live traffic.
 - Working in and adjacent to pedestrian footways / Interface with public including providing and maintaining safe routes for pedestrians at all times (drawings to be included).
 - Temporary/portable traffic lights.
- Accessing and Testing Live Electrical Systems/Supplies.
- Night working (if applicable).
- Manual Handling.
- Working at height.
- Concurrent site activities.
- Working around existing utility apparatus.
- Use of plant and machinery in restricted areas.
- Existing services.
- Use of herbicides and COSHH substances.
- Traffic signs removal and erection.
- Noise and Vibration
- Management of Waste.
- Leakages and Spills.
- Establishment and removal of traffic management including drawings.
- Slot Cutting Activities

APPENDIX 2/3: RETENTION OF MATERIAL ARISING FROM SITE CLEARANCE

1.0 General

- 1.1 Materials arising from site clearance and excavation activities are to be re-used or recycled in accordance Liverpool City Councils Environmental Management Policy.

All stone or precast concrete kerbs, flags etc, and excavated material such as concrete and bituminous surfacing, ironwork, brickwork, fencing and lighting columns and litter bins shall be transported to the following address:-

Newton Road Re-Cycling Plant
Newton Road (off Prescott Road)
Liverpool
L13 7HQ

APPENDIX 2/5: HAZARDOUS MATERIALS

1.0 General

- 1.1 The Contractor shall comply with the requirements of Clause 170AR when using substances he has assessed as hazardous to health.
- 1.2 This list does not remove the obligation of the Contractor to comply with the requirements of Clause 124 relating to any material used.
- 1.3 The Contractor shall identify any hazardous substances that he proposes to use, not previously identified within the Pre-Construction Health & Safety Information Pack.
- 1.4 In the event of hazardous material being found during the works the contractor shall produce a full ground contamination survey, as detailed by the relevant Authority, and organise for suitable analysis by qualified personnel.

APPENDIX 5/1: DRAINAGE REQUIREMENTS

1.0 General

- 1.1 Prior to works commencing on site the contractor shall trace the line of existing gully connections to existing highway drainage system and public sewer system and prove integrity of any existing gully connections that are to be used to connect new gullies to.
- 1.2 The Contractor shall ensure that during the course of the works all carriageway and footway areas are maintained to prevent any ponding or flooding of surface water.
- 1.3 All existing surface water drainage gullies and connecting pipework, in the vicinity of the site are to be maintained in a functional condition throughout the duration of the contract.
- 1.4 The Contractor's operatives entering any confined spaces shall comply with the requirements of United Utilities Safe Systems of Work.
- 1.5 The Contractor shall refer to Drawing Number 00205011/700/01 for details of proposed drainage works.
- 1.6 The existing highway drainage including all gullies and connections shall be completely cleared of silt and debris on completion of the works.

2.0 Chambers and Gullies

- 2.1 Proposed gullies and connecting pipework shall be constructed in accordance with Type G1 as indicated on Standard Detail HD/D5.
- 2.2 Gully outlet pipes to have ST4 concrete surround (trench type Z) continued down to junction with proposed drain.
- 2.3 Gully grates and frames shall be in ductile iron to B.S. EN 124, of the rectangular, hinged, straight bar type. In I situations the grating will be required to be non-removable after installation and 100mm deep.
- 2.4 Gully pots shall be pre-cast concrete to B.S. 5911 or PVC-U to BS 4460, with ST4 concrete surround. Other types of gully pots e.g. thermoplastic will be considered as suitable if they are BSI kite marked or have an equivalent third party certification. Gullies shall be trapped and fitted with a rodding eye and stopper. See Standard Detail HD/D5.
- 2.5 Covers to proposed drainage chambers including the replacement of such, shall comply with BS EN 124 as follows
 - Manhole covers on all chambers to have 600x600mm clear opening in ductile iron.

3.0 Pipes

- 3.1 Surface water drainage pipes shall be 150mm internal diameter and be fabricated in either:
- (i) Vitrified clay to be to BS EN 295
 - (ii) Sulphate resistant concrete in accordance with BS 5911: Part 110
 - (iii) UPVC in accordance with BS EN 1452
- 3.2 Pipe bedding for drains is shown on Standard Detail HD/D1 – Pipe Bedding Detail for Rigid Pipes – 1. Where cover is less than 1.2 metres the pipe shall be bedded with type Z bedding detail.
- 3.3 All joints to proposed surface water drainage shall be watertight.
- 3.4 Connections to existing highway drainage pipework should be jointed via a band seal coupling.
- 3.5 All pipes, chambers or gullies which are required to be abandoned/filled, are shown on Drawing Number 00205011/200/01.
- 3.6 Pipes and gully branch pipework to be abandoned shall be treated as follows:-
- (a) Less than 1m of cover below formation - sewers to be excavated and sealed and the resultant void backfilled with acceptable material.
 - (b) Greater than 1m of cover below foundation:- sewer pipe to be sealed off at downstream end of pipe connection to be abandoned and then filled with foamed concrete.
- 3.7 Manhole chambers to be abandoned shall be treated as follows:-
- (a) Less than 1m of cover below formation: chamber, including surrounds, shall be excavated and the resultant void backfilled with acceptable material.
 - (b) Greater than 1m of cover below formation: The chamber shall be cleaned before backfilling with granular type 1 sub base material compacted by a method specified in table 8/1 series 800 of the specification.
- 3.8 Backfilling of trenches shall not be commenced until any concrete surround/support to the pipe has achieved its 7 day crushing strength and until the works has been approved by the Supervisor /Highway Authority. The time period shall not be less than 3 days from placing of the concrete.
- 3.9 Trenches in paved areas shall be backfilled above the pipe surround material with Granular Type 1 sub base material in accordance with 803 of specification and compacted in accordance with 505 of the specification.
- 3.11 The withdrawal of timber or sheeting shall be carried out simultaneously with the compaction of the filling material so that no voids shall be left in the finished work. Under no circumstances will the withdrawal of timber or sheeting be permitted after compaction has been carried out and no payment will be made to the Contractor for timber or sheeting left in the excavation.

- 3.12 Thermoplastic structured wall pipes to comply with WIS 4-35-01. Pipes shall be BSI kite marked or have equivalent third party certification.
- 3.13 Pipes shall have flexible watertight joints complying with sub-clause 3 of Clause 504. Air tests shall be carried out on drains in accordance with Clause 509.
- 3.14 The Contractor shall keep to a minimum sewage, water or other effluent flows into the works from whatever source or cause by pumping / or other means. The Contractor is to make every effort to prevent any discharges from causing damage to the works or adjoining property and any inconvenience to the public. Methods of dealing with any flows and details of equipment to be employed shall be submitted to the Supervisor for approval, prior to works commencing.
- 3.15 All pipe trenches are to be supported in accordance with the recommendations for standards of good practice for excavation in BS 6031, BS 6164 and Report R97 'Trenching Practice' published by CIRA.

APPENDIX 7/1: PAVEMENT DETAILS**1.0 Permitted Pavement Options – Flexible Construction**

- 1.1 The contractor shall refer to Drawing No 00205011/700/01 for details of pavement layers and thicknesses.
- 1.2 Grid for checking surface levels of pavement courses (excluding Surface course) to be:-
 Longitudinal dimension: 10m
 Transverse dimension: 2m
- 1.3 Site Category Q
- 1.4 The Flexible Construction Joints shall be as per Standard Detail HD/R14.
- 1.5 CBR tests are to be undertaken by Contractor prior to the commencement of the main works and any Capping Layer required is to be designed in accordance with IAN 73/06-1 2009 Fig. 3.1/3.2 (restricted design option).
- 1.6 Pavement materials shall conform to the following specifications:

Spec. Clause	Description	BS EN	Pen	Min PSV	MAX AAV
Surface Course					
942	Thin Surface Course System with 10mm aggregate. (thickness 30mm)	Refer to Item 2.0 overleaf	40/60	65	16
Binder Course					
906	AC 20 HDM Bin Rec (thickness 70mm)	13108-1	40/60	-	-
Base Course					
906	AC 32 HDM Base Rec (thickness 150mm)	13108-1	40/60	-	-

Sub Base			
			Requirement
803	Granular Type 1 Material (thickness 200mm)		Minimum compacted CBR: 30% Moisture content of material shall be 1-2% of the optimum moisture content.
	ST4 Concrete (thickness 350mm)		For use in narrow areas $\leq 1.0\text{m}$

Capping			
613	Granular Material Type 6F2		Thickness to be determined as 1.5 above.

2.0 Thin Surface Course Systems: Information to be Provided by the Contractor

2.1 The Contractor shall provide the following information with his tender submission:

- i) A copy of the British Board of Agrément HAPAS Roads and Bridges Certificate or Certificates for the thin surface course system or systems that are proposed for use in the works, together with a copy of the Quality Plan and Installation Method Statement associated with each Certificate.
- ii) For any certificate that covers several variants of one thin surface course system, proposed variant or variants of the system to be used in the works.
- iii) If the thin surface course system is not produced under a Sector Scheme, the proposed component materials to be used in the thin surface course system and their proportions for each proposed system.
- iv) Proposed source or sources of coarse aggregate together with statement of properties including polished stone value, ten per cent fines value, aggregate abrasion value and flakiness index.
- v) If regulating materials is to be used, evidence of its deformation resistance either independently or in combination with the thin surface course system.

APPENDIX 7/2: EXCAVATION, TRIMMING AND REINSTATEMENT OF EXISTING SURFACES

1.0 Details of reinstatements for existing bituminous highway pavements are detailed on Standard Detail HD/R15 and shall comprise:-

30mm AC 10 Close Surface Course

(As Appendix 7/1)

70mm AC 20 HDM Binder Course

(As Appendix 7/1)

APPENDIX 7/4: BOND COATS, TACK COATS AND OTHER BITUMINOUS SPRAYS

- 1.0 Bituminous spray tack coat should be applied prior to the laying of new material on existing surfaces and on new binder course and base materials which have been trafficked, prior to the application of the wearing course.
- 2.0 The tack coat shall be to BS 434: Part 1 : Bitumen Emulsion K1-40 spread at a rate of 0.4 to 0.6 litres/m².
- 3.0 The contractor shall ensure that when applying the tack coat he employs suitable approved procedures to ensure that tack coat does not stain or mark any kerbs, edgings or any other features in the footway or carriageway.
- 4.0 Where tack coat is to be applied to concrete surfaces, (existing or proposed) the contractor is to give 48 hours notice in advance. The Engineer will be in attendance during this operation.

APPENDIX 11/1: KERBS FOOTWAYS AND PAVED AREAS

1.0 Kerbs, Channels and Edgings

- 1.1 The proposed kerb locations are shown on Drawing No. 00205011/700/01.
- 1.2 All proposed kerb lines shall be laid on a 150mm bed and backing of ST4 concrete, edging kerbs shall be laid on 100mm bed and haunch of ST4 concrete as shown on Standard Detail HD/R10.
- 1.3 All new kerb lines are to be set to the co-ordinated information that will be supplied to the successful tenderer and, where necessary, agreed on site with the Engineer.
- 1.4 No unit of kerb, channel or edging shall be used if its length is less than 300mm.
- 1.5 Kerb and Channel Types shall be as indicated on Drawing No. 00205011/700/01.
- 1.6 Proposed kerb face is to be 100mm, 25mm for vehicular accesses and 6mm for pedestrian crossings.

2.0 Uncontrolled Pedestrian Facilities

- 2.1 Tactile Pavings are indicated on Drawing No. 00205011/700/01 and shall comply with the following specification:

Size : 450 x 450 x 70mm

Type : PCC - blister type

Colour : Buff

Laid on : 100mm ST4 concrete

Refer to Standard Detail HD/R4&6 for construction details.

6.0 Footways and Paved Areas (Flexible Surfacing)

Spec. Clause	Description	BS EN	Pen	Min PSV	MAX AAV
Surface Course					
1105	AC 6 Dense Surf (to clause 909) (thickness 20mm)	13108-1	100/150	45	16
Binder Course					
1105	AC 20 Dense Bin (to clause 906) thickness 60mm	13108-1	100/150	-	-
Sub Base			Requirement		
803	Granular Type 1 Material thickness 100mm		Minimum compacted CBR: 30% Moisture content of material shall be 1-2% of the optimum moisture content.		

APPENDIX 12/3: TRAFFIC SIGNS: ROAD MARKINGS AND STUDS

1.0 General

- 1.1 The locations of permanent road markings are shown on Drawing No. 00205011/700/01 and 00205011/1200/01. The stated Diagram Numbers refer to road marking details in Traffic Signs and General Directions 2002.
- 1.2 Exact marking locations shall be in accordance with the Traffic Signs Manual (Chapter 5) and agreed with the Engineer prior to installation.
- 1.3 New markings must be located to tie in correctly with existing carriageway markings.

2.0 Materials and Application

- 2.1 All permanent road markings shall be of thermoplastic material complying with BS 3262 Class A. All road markings shall be yellow or white and shall be reflectorised as described in Clause 1212.3 with additional solid glass beads placed on the surface.
- 2.2 Tack coats are not required except on concrete surfaces, setts or where otherwise instructed by the Engineer.
- 2.3 Permanent or temporary lines and studs which conflict with the permanent road markings shall be removed or permanently obliterated to the Engineer's satisfaction.
- 2.4 The method employed for removing road markings shall be grit blasting. This method is currently being trailed by Liverpool City Council with previous work undertaken by Cumbrian Ultra Clean. The contractor's attention is drawn to the fact that Cumbrian Ultra Clean is not a nominated contractor under this contract.
- 2.5 Throughout the grit blasting process a road sweeper will be present on the site to remove the associated grit and resulting debris.
- 2.6 A method statement associated with the grit blasting works will be required to be submitted by the Principal Contractor and approval received by the Engineer prior to the works commencing.

APPENDIX 0/4: LIST OF DRAWINGS INCLUDED IN THIS CONTRACT

DRAWING NO.	DRAWING TITLE	STATUS
1. Contract Specific Drawings		
00205011/100/01	Information Boards	
00205011/200/01	Site Clearance	
00205011/700/01	Construction	
00205011/700/02	Proposed Road Hump Amendments	
00205011/1200/01	Proposed Road Markings	

2. Highway Standard Details – Std Detail/.....		
HD/D1	Pipe Bedding Detail for Rigid Pipes -1	
HD/D5	Details of Gully Types	
HD/R2	Flexible Footway Construction	
HD/R4	Standard In-Line Uncontrolled Pedestrian Dropped Crossing	
HD/R6	Non-Standard In-Line Uncontrolled Pedestrian Dropped Crossing	
HD/R10	Kerbs, Edging & Channel Details	
HD/R14	Flexible Construction Joints	
HD/R15	Permanent and Temporary Reinstatement of Highway Pavement (For Drainage)	
HD/R35	Bituminous Speed Cushion Detail	

6. Statutory Undertakers Returns		
All original Statutory Undertakers Returns are available for inspection during the Tender Period, at the offices of Amey in Speke.		