



Radcliffe Civic Hub

LIGHTING AND ELECTRICAL SPECIFICATION APPENDICES

Issue/revision	P01		
Remarks	Issued for Review		
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Project number	70092923		
File reference	70092923-WSP- HLG-RCHUB-SP- LI-0001		

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PREAMBLE TO THE SPECIFICATION

1. The Specification referred to shall be the *Specification for Highway Works*, published by The Stationery Office (formerly HMSO) as Volume 1 of the *Manual of Contract Documents for Highway Works*, as modified and extended by the following contract specific items:
 - a. Appendix 0/1: Contract specific Additional, Substitute and Cancelled Clauses, Tables and Figures;
 - b. Appendix 0/2: Contract specific minor alterations to existing Clauses, Tables and Figures;
 - c. The contract specific Numbered Appendices listed in Appendix 0/3;
 - d. Appendix 0/5: Special National Alterations of the Overseeing Organisation of Scotland, Wales or Northern Ireland.

Appendix 0/4 contains a list of the Drawings.
2. 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. An Additional Clause as indicated by a suffix 'A' in Appendix 0/5 is an alteration originating from the Overseeing Organisation of Scotland, Wales or Northern Ireland. An Additional Clause as indicated by a suffix 'AR' in Appendix 0/1 is a contract specific alteration.
4. A Substitute Clause, as indicated by the suffix 'S' in Appendix 0/5 is an alteration originating from the Overseeing Organisation of Scotland, Wales or Northern Ireland. A Substitute Clause as indicated by a suffix 'SR' in Appendix 0/1 is a contract specific alteration.
5. A Cancelled Clause as indicated by a suffix 'C' in Appendix 0/5 is an alteration originating from the Overseeing Organisation of Scotland, Wales or Northern Ireland. A Cancelled Clause indicated by a suffix 'CR' in Appendix 0/1 is a contract specific alteration.
6. Insofar as any of the contract specific Numbered Appendices may conflict or be inconsistent with any provision of the Specification for Highway Works the Numbered Appendices shall always prevail. Additionally, Numbered Appendices 0/1 and 0/2 shall take precedence over Numbered Appendix 0/5.
7. Any reference in the Contract to a Clause number or contract specific Appendix shall be deemed to refer to the corresponding Substitute Clause number or contract specific Appendix listed in Appendix 0/1, 0/2 or 0/5.
8. 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. 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. Any Appendix referred to in the Specification which is not used shall be deemed not to apply.
11. Where a Clause in the Specification is prefixed by an # this indicates that this particular Clause has a substitute National Alteration for one or more of the Overseeing Organisations of Scotland, Wales or Northern Ireland. 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 Organisations.
12. 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 Bury Metropolitan Borough Council (BMBC). Where the Specification requires the provision of documentation to the Overseeing Organisation for statutory or type approval such documentation shall be provided to BMBC.
13. 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 further amended as follows:
 - a. If any agreement, consent or approval required to be obtained from the Overseeing Organisation impacts on the health and safety of the general public, the environment or any property or equipment not owned or operated by the Contractor or the Design Build Finance and Operate concessionaire, such agreement, consent, approval shall be obtained from BMBC.
 - b. Where the Specification provides for the Overseeing Organisation to require a test, waive the requirement for a test or alter testing frequency, the party to whom the Overseeing Organisation's roles and functions have been ascribed by paragraph 12 above shall exercise such decisions in accordance with the Secretary of State's requirements stated in the Contract.
14. Where Standards and other documents are incorporated into the Contract by reference the respective edition used shall be that which is current on the Contract Reference Document Date unless otherwise stated in the Specification.

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.
1307.7 AR	Materials and Surface Finishes	7
1307.8 AR	Materials and Surface Finishes	7
1405.3 AR	Temporary Lighting	7
1417.2 AR	Base Compartment Fixing Arrangements	7
1420.6 AR	Earthing	7
1421.20 AR	Underground and Ducted Cable	7
1423.6 AR	Armoured Cable Terminations	7

List of Substitute Clauses, Tables and Figures

Clause no.	Title	Written on page no.

List of Cancelled Clauses, Tables and Figures

Clause no.	Title
1307.4 CR	Materials and Surface Finishes

Additional Clauses, Tables and Figures

Clause no.	Title and written text
1307.7 AR	Materials and Surface Finishes Columns and posts shall be factory-finished. Paints and surface finishes shall not be applied on site, with the exception of touching-up as advised by the Engineer.
1307.8 AR	Materials and Surface Finishes Column and post door locks shall be lubricated. The lubricant shall be Wynn's white water-resistant grease or similar approved.
1405.3 AR	Temporary Lighting Catenary wiring shall not be utilised to provide power to temporary lighting columns.
1417.2 AR	Base Compartment Fixing Arrangements Where an item of street furniture is replaced the existing internal electrical equipment shall not be transferred to the new piece of furniture. New electrical equipment shall be provided.
1420.6 AR	Earthing Column and post door earth cables shall be of sufficient length to enable the door to be placed flat on the ground and so as to prevent unnecessary strain on the cable and its connections.
1421.20 AR	Underground and Ducted Cable All cables shall be BASEC approved.
1423.6 AR	Armoured Cable Terminations CET-type worm-drive glands shall not be used. Brass glands shall be used, complete with brass earth tag, brass lock nut and shroud.

Substitute Clauses, Tables and Figures

Clause no.	Title and written text

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

Clause no.	Alterations to be made
1301.3	After 'Clauses 1309, 1310 and 1311' insert ', manufacturer's instructions,'.
1407.2	After item (vi) insert '(vii) be factory finished.'
1418.4	After 'unless otherwise stated in Appendix 14/4.' insert 'All hinges and locks shall be lubricated. The lubricant shall be Wynn's white water-resistant grease or similar approved.'
1420.2	Delete 'terminal' and replace with 'bar'.

APPENDIX 0/3: LIST OF CONTRACT-SPECIFIC NUMBERED APPENDICES REFERRED TO IN THE SPECIFICATION AND INCLUDED IN THE CONTRACT

Appendix 0/3 is comprised of two lists, A and B, of contract specific Numbered Appendices. List 'A' is a list of the contract specific Numbered Appendices referred to in the Specification for Highway Works and used in the Contract.

KEY & GUIDE TO TYPES OF CONTRACT SPECIFIC NUMBERED APPENDICES - WHO COMPILES/COMPLETES

Numbered Appendix to be compiled and/or completed by:

- (Co) Compiler compiles: Identified in the Notes for Guidance examples by the term 'Sample' included in their title
- (Co/C) Compiler partially compiles and Contractor completes and returns to Overseeing Organisation
- (Co/T) Compiler partially compiles and Tenderer completes and returns with Tender
- (C) Contractor completes and returns to Overseeing Organisation
- (P) This indicates the Appendix is a national pro forma and format must not be altered

List 'A': Contract-specific Numbered Appendices Referred to in the Specification for Highway Works and Included in the Contract

Volume no.	Completed by	Appendix no.	Title
0000			INTRODUCTION
		0/1	Contract-specific Additional, Substitute and Cancelled Clauses, Tables and Figures Included in the Contract
		0/2	Contract-specific Minor Alterations to Existing Clauses, Tables and Figures Included in the Contract
		0/3	List of Contract-specific Numbered Appendices Referred to in the Specification and Included in the Contract
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0100			PRELIMINARIES
		1/5	Testing to be Carried Out by the Contractor
		1/9	Control of Noise and Vibration
		1/10	Permanent Works to be Designed by the Contractor
	C	1/16	Privately and Publicly Owned Services and Supplies
		1/23	Risks to Health and Safety

Volume no.	Completed by	Appendix no.	Title
0200			SITE CLEARANCE
	Not Used	2/1	List of Buildings, etc. to be Demolished or Partially Demolished
		2/2	Filling of Trenches and Pipes
	C	2/3	Retention of Material Arising from Site Clearance
0500			DRAINAGE AND SERVICE DUCTS
		5/2	Service Duct Requirements
1300			
		13/1	Information to be Provided When Specifying Lighting Columns and Brackets
	C	13/2	(Specification for Highway Works) Typical Lighting Column and Bracket Data Sheets 1 and 2
		13/3	Instructions for Completion of Lighting Column and Bracket Data Sheets
1400			
		14/1	Site Records
		14/2	Location of Lighting Units and Feeder Pillars
	C	14/3	Temporary Lighting
	C	14/4	Electrical Equipment for Road Lighting
		14/5	Electrical Equipment for Traffic Signs
1900			PROTECTION OF STEELWORK AGAINST CORROSION
		19/1	Form HA/P1 (New Works) Paint System Sheet
		19/4	Paint Sample Dispatch Sheets 1 & 2

List 'B': Contract-specific Numbered Appendices devised for the Contract

Volume no.	Appendix no.	Appendix Title

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

Contract-specific Drawings

Drawing no.	Title
70092923-WSP-HLG-RCHUB-DR-LI-0001	Road Lighting Temporary & Site Clearance Layout, sheet 1 of 1
70092923-WSP-HLG-RCHUB-DR-LI-0002	Road Lighting Permanent & Site Clearance Layout, sheet 1 of 1
70092923-WSP-HEL-RCHUB-DR-LI-0001	Road Lighting General Electrical Details, sheet 1 of 2
70092923-WSP-HEL-RCHUB-DR-LI-0002	Road Lighting General Electrical Details, sheet 2 of 2

Standard Drawings Brought into the Contract by Reference

HCD published by The Stationery Office as Volume 3 of the *Manual of Contract Documents for Highway Works* contains the following drawings brought into the Contract by reference. Unless otherwise stated below the whole drawing is brought into the Contract.

Drawing no.	Title	Date	Aspect required if not whole Drawing
I1	Longitudinal Sections and Details of Transverse Ducts	May 2004	
I2	Duct Trench Cross Sections and Details of Mandrel	May 2004	

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

Clause no.	Works, goods or material	Test	Frequency of testing	Test certificate	Comments
501	Pipes for drainage and service ducts (PVC-U)				Product certification scheme or equipment applies for products not falling under the Construction Products Regulation (CPR)
1305	Anchorage for use in drilled holes	Tensile load			
1306	Anchorage in drilled holes to columns and masts with flange plates	Loading test on site			
1421	Cable				Product certification scheme or equivalent applies
1424	Lighting units	Test specified in Clause 1424	Each unit	Required	Product certification scheme or equivalent applies
1424	Networks	Tests specified in Clause 1424	Each network	Required	Certification that the installation complies with BS 7671 is required (see also Appendix 14/1)

1. Unless otherwise stated above, all sampling and testing in this Appendix shall be by the Contractor.
2. Tests comparable to those specified in this Appendix will be necessary for any equivalent work, goods or materials proposed by the Contractor.
3. 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.
4. 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.

APPENDIX 1/9: CONTROL OF NOISE AND VIBRATION

1. The Local Authority having responsibility for the area is:

Bury Council <https://www.bury.gov.uk/>

Street Lighting contact details:

Name: Philip Hewitt

Position: Group Engineer

Email: - P.M.Hewitt@bury.gov.uk

2. It is for the Contractor to decide whether to seek the Local Authority's formal consent to the proposed methods of work and to the steps proposed in order to minimise noise.

APPENDIX 1/10: PERMANENT WORKS TO BE DESIGNED BY THE CONTRACTOR

- The following elements are to be designed by the Contractor, in consultation with others, and shall be submitted to the Engineer for approval prior to ordering.

Element	Location	Design specification
Proposed Planted lighting columns, and associated foundations, in accordance with the chosen manufacturers data sheets and the ground conditions of the site.	As shown on drawing(s) 70092923-WSP-HLG-RCHUB-DR-LI-0001 70092923-WSP-HLG-RCHUB-DR-LI-0002 70092923-WSP-HEL-RCHUB-DR-LI-0002	As per the requirements of Appendix 1/10 and 13/1, Attention is drawn to Series 1300 sub-clauses 1301.2, 1303.1 and 1303.2.

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

1. This Appendix contains details of services and supplies affected by the Works, details of preliminary arrangements that have been made with Statutory Undertakers, utility companies and others for the alteration of services and supplies affected by the Works, and details of any orders already placed.
2. The Contractor shall make arrangements with the Statutory Undertakers, utility companies and others concerned, for the co-ordination of its work with all work which needs to be done by them or their contractors concurrently with the Works. Compliance with any periods of notice given in this Appendix does not relieve the Contractor of its obligations.
3. Private services to individual items of equipment have not generally been listed or shown on the Drawings. The Contractor shall make arrangements with the Statutory Undertakers and others concerned for the phasing of all necessary disconnections and diversion of private services affected by the Works.
4. The names, addresses and contact details of the Statutory Undertakers, utility companies and authorities serving in the locality are listed below.

Name	Address	Contact details
Electricity Northwest	N/A	Email: www.enwl.co.uk/get-connected/apply-for-a-new-connection/unmetered-connections/ Tel: 0800 988 1730
Bury Council	Bury Council Town Hall Knowsley Street Bury Lancashire BL9 OSW	Email: www.bury.gov.uk Tel: 0161 253 5000

Services and Supplies Affected by the Works – Temporary works

Location	Description	Group*	Drawing no.	Details
Dale Street – Radcliffe	Disconnection of supply to: EX01, EX04* and EX05	B	70092923-WSP-HLG-RCHUB-DR-LI-0001	Distribution Network Operator Disconnection (DNOD) of 25A SP&N 230V T-N-CS supply
Church Street – Radcliffe	Disconnection of supply to: EX1A	B	70092923-WSP-HLG-RCHUB-DR-LI-0001	Distribution Network Operator Disconnection

				(DNOD) of 25A SP&N 230V T-N-CS supply
Dale Street – Radcliffe	New connection of supply to: LP05	B	70092923-WSP-HLG-RCHUB-DR-LI-0001	Distribution Network Operator Connection (DNOC) of 25A SP&N 230V T-N-CS supply

Note* - prior to construction the contractor for the works shall undertake a survey and determine the power supply to EX04 Dale Street and confirm the required works to be undertaken regarding the power arrangement to this asset.

Services and Supplies Affected by the Works – Permanent works

Location	Description	Group*	Drawing no.	Details
Dale Street – Radcliffe	Disconnection of supply to: EX02, EX03* and EX05	B	70092923-WSP-HLG-RCHUB-DR-LI-0002	Distribution Network Operator Disconnection (DNOD) of 25A SP&N 230V T-N-CS supply
Deansgate – Radcliffe	Disconnection of supply to: EX01 and EX02	B	70092923-WSP-HLG-RCHUB-DR-LI-0002	Distribution Network Operator Disconnection (DNOD) of 25A SP&N 230V T-N-CS supply
Dale Street – Radcliffe	New connection of supply to: LP01, LP02 and LP05	B	70092923-WSP-HLG-RCHUB-DR-LI-0002	Distribution Network Operator Connection (DNOC) of 25A SP&N 230V T-N-CS supply
Deansgate – Radcliffe	New connection of supply to: LP01	B	70092923-WSP-HLG-RCHUB-DR-LI-0002	Distribution Network Operator Connection (DNOC) of 25A SP&N 230V T-N-CS supply

Note* - prior to construction the contractor for the works shall undertake a survey and determine the power supply to EX03 Dale Street and confirm the required works to be undertaken regarding the power arrangement to this asset.

*

- A Work expected to be completed before the commencement of the Works.
- B Work required after commencement of the Works which does not require prior work by the Contractor but does require the Contractor to undertake liaison and coordination.
- C Work required after commencement of the Works which does not require prior work by the Contractor.
- D Work expected to be in progress at the commencement of the Works.
- E Work to be wholly undertaken by the Contractor.

Note. The disconnection of EX05 Dale Street and new connection of LP05 Dale Street for both the temporary & permanent works shall be undertaken the same day in conjunction with the DNO to ensure lighting levels in the area are maintained.

APPENDIX 1/23: RISKS TO HEALTH AND SAFETY

1. All known Residual Risks are identified on the Contract Drawings by notation of the Health and Safety Symbols, with further CDM risks identified in the scheme T446- Design Risk Management Schedule & T447- Significant Residual HS Risk Schedule.
2. The STATS drawings for services below and above ground shall be sourced and read in conjunction with these drawings throughout the demolition, construction, and maintenance (where applicable) of this scheme.
3. Clearances from overhead lines (OHL) shall be considered in accordance with the latest HSE guidance, which at the time of writing is guidance note GS6 (fourth edition) and following consultation with the energy distributor in relation to the OHL locations and specification of the lines.
4. Safe working procedures and method statements are the responsibility of the contractor for the works.

APPENDIX 2/2: FILLING OF TRENCHES AND PIPES

1. All redundant cables, irrespective of depth below formation, shall be removed.

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

1. Table 2/3-1 – Materials to be Retained – Temporary Works

Location	Description	Drawing No.	Delivered to
Dale Street	EX05 column & Lantern / Banner arm and traffic sign	70092923-WSP-HLG-RCHUB-DR-LI-0001	Column & Lantern to be set aside for re-use as LP05. Banner arms and traffic sign to be delivered to Department for Operations, Unit 34, Bradley Fold Ind Estate, Bradley Fold Road, Bolton, BL2 6RS (6RT for sat nav)
Dale Street	EX04 and EX01 - Festive brackets	70092923-WSP-HLG-RCHUB-DR-LI-0001	Department for Operations, Unit 34, Bradley Fold Ind Estate, Bradley Fold Road, Bolton, BL2 6RS (6RT for sat nav)
Church Street	EX01A – Festive brackets and traffic signs	70092923-WSP-HLG-RCHUB-DR-LI-0001	Department for Operations, Unit 34, Bradley Fold Ind Estate, Bradley Fold Road, Bolton, BL2 6RS (6RT for sat nav)

Table 2/3-2 – Materials to be Retained – Permanent Works

Location	Description	Drawing No.	Delivered to
Dale Street	EX05 column & Lantern	70092923-WSP-HLG-RCHUB-DR-LI-0002	Column & Lantern to be set aside for re-use as LP05.
Dale Street	EX02 and EX03 - Festive brackets,	70092923-WSP-HLG-RCHUB-DR-LI-0002	Department for Operations, Unit 34,

	banner arms and traffic sign		Bradley Fold Ind Estate, Bradley Fold Road, Bolton, BL2 6RS (6RT for sat nav) Traffic sign to be removed to Bury Council highways depot for re-use.
Deansgate	EX01 and EX02 – Festive brackets and traffic signs	70092923-WSP-HLG-RCHUB-DR-LI-0002	Department for Operations, Unit 34, Bradley Fold Ind Estate, Bradley Fold Road, Bolton, BL2 6RS (6RT for sat nav)

APPENDIX 2/5: HAZARDOUS MATERIALS

1. Redundant items of electric and electronic equipment shall be disposed of in accordance with The Waste Electrical and Electronic Equipment Regulations 2013 (WEEE Regulations).

APPENDIX 5/2: SERVICE DUCT REQUIREMENTS

1. The general arrangement of ducts for lighting power cables shall be as per HCD drawing no. I2.
2. Locations of duct and chamber - The locations duct and chamber drawings and schedules shall be as shown on the road lighting detailed design layout plans and referenced in Tables 5/2-1 and 5/2-2 contained in 5/2: Service Duct Requirements (Lighting).
3. On completion of cabling, ducts shall be left with a draw rope in place and should be sealed with split plugs, or a suitable alternative material, to adequately seal the ducts against the ingress of foreign matter.
4. Ducts for private lighting power cables shall:
 - a. Be thermoplastic structured wall
 - b. Be coloured orange
 - c. Be smooth internal bore without any sharp edges to the pipes
 - d. Have a minimum internal diameter of 100mm.
 - e. Have the words 'STREET LIGHTING' embossed with 5mm letters at 600mm intervals on the exterior wall that is to face upwards when laid.
 - f. Be in accordance with BMBC standard details referenced within this document.
 - g. Be constructed in accordance with BS EN 50086-2-4.
5. Marker blocks shall not be utilised.
6. Service ducts for DNO supplies shall be thermoplastic structured wall and coloured black and shall be provided and installed by the Contractor. The internal diameter shall be 100mm minimum and suit the intended purpose and be agreed with the DNO.
7. The Contractor shall comply with his own design, methods and procedures as agreed with the DNO for providing the ICP service to the Overseeing Organisation.
8. Duct access chambers shall conform to the specification below.

Table 5/2-1 – Lighting Duct Schedule

Unit Ref	Duct Type	From	To	No of Ducts	Length (m)
N/A					

- a. The depth and dimensions of chambers shall be as described in Table 5/2-3 contained in 5/2: Series 500 Schedules for Road Lighting.
- b. Duct access chambers shall be as detailed in the Contract Drawings and in accordance with relevant overseeing organisation's requirements.

- c. Duct chambers shall be as described on the standard detail drawings. Duct Chambers shall be installed at the ends of all road crossings, at bends in excess of 40 degrees and any other locations where the routing of ducts may hinder cable pulling.

Table 5/2-2 – Lighting Chamber Schedule

Unit Ref	Chamber Type	No of incoming Verge Ducts	No of incoming Cross Carriageway-Ducts
N/A			

- d. The Contractor shall insert in table 5/2-3 the details of the equipment proposed to be used.

Table 5/2-3 – Lighting Chamber Manufacturers

Equipment	Manufacturer	Catalogue Number
N/A		

APPENDIX 13/1: INFORMATION TO BE PROVIDED WHEN SPECIFYING LIGHTING COLUMNS AND BRACKETS

General

- a. The Contractor shall establish soil types on Site for column and post foundations and submit details with the Column and Bracket Data Sheets as detailed in Appendix 13/2.
- b. The Contractor shall design foundations for planted, crank root and flange plate lighting columns and submit designs and column and bracket data sheets to the Overseeing Organisation.
- c. The Contractor shall offer alternative foundation depths as appropriate to accommodate services encountered on Site.
- d. Crank root lighting columns shall be designed so that:
 - i. The column is flange plated,
 - ii. The column/flange plate shall be set within a 450mm x 450mm chamber frame with A15 cover specially cut to be placed over the top of the lighting column and fitted within 5mm of the outside of the base compartment when settled in the cover frame – to cover holding down fixings be enable the future inspection of said fixings,
 - iii. The position of the column on the horizontal section of the root is adjustable on the root by +/- 1.0m in the front to back direction of the footway (or other planted location),
 - iv. Nuts, bolts threads and fixings for the fixing of the flange plate shall be stainless steel,
 - v. The vertical planted element below the horizontal section shall be central to the overall horizontal section of the crank root,
 - vi. The horizontal section of the crank root shall be between 100mm and 200mm below the finished surface,
 - vii. The crank root shall be designed so that after the vertical section is planted and the final position of the column is established on the horizontal section – the horizontal section can be trimmed to a maximum of 1m in length at any point on the horizontal section,
 - viii. Cut ends of the horizontal section shall be treated with a zinc based paint. After curing bitumen shall be applied. All protective coatings shall be fully cured prior to reinstatement.
- e. All equipment to be treated to paint specification G2a shall be delivered to Site with coatings complete up to, but excluding, final coat, unless the type of final coat application prevents this.
- f. Columns and fixtures shall be compatible with the Contractor's luminaires.
- g. Columns shall be designed and manufactured to allow fitment of post top mounted luminaires. Where a reduction in the post diameter is required to accommodate a post top luminaire any reducer fixings shall fit flush with the outer surface of the column tube.

- h. Columns and brackets shall be supplied in accordance with table 13/1-1.
- i. Door locks shall be of the tri-key type and 3 keys shall be supplied to the Overseeing Organisation upon commencement of the Contract.
- j. All door locks shall be greased upon Commissioning.
- k. All fastenings shall be in stainless steel.
- l. Each column shall be designed to accommodate a sign plate as specified by Mallatite
- m. Column base compartments shall be a minimum of 1.2m in height from ground level.
- n. All columns, and fixtures shall be supplied with a marine grade plywood back board, not less than 12mm thick, suitably treated to repel moisture. It shall be securely fixed in the base compartment to provide a minimum clearance of 100mm to the inside front of the housing. The panel and housing aperture shall be of sufficient size to enable the electrical equipment to be satisfactorily mounted and maintained.

2. Data Sheets

- a. The Contractor shall submit to the Overseeing Organisation his proposal for columns, brackets and posts (by way of submission of Column and bracket data sheets) 28 days prior to the commencement of orders. The Contractor shall action his proposal 28 days after submission of the proposal to the Overseeing Organisation unless instructed otherwise by the Overseeing Organisation. [1303.1]

3. Location and Identification Markings

- a. All Assets shall be numbered with Identification and location markings which comply with the requirements of 1477AR. [1304.5]

4. Installation of Foundations, Anchorages and Attachment Systems

- a. Earth backfill shall not be used for the support of columns posts unless specifically instructed by the Overseeing Organisation. [1305.5]

5. Handling, Transport and Erection

- a. Doors of columns and posts shall face away from oncoming traffic except:
 - i. where said Assets are located in central reserves or islands, the door shall be in parallel to the road, or
 - ii. where said Assets are located within the central island of a roundabout, the door shall face the centre of the roundabout. [1308.4]

6. Amendments and Additions to BS 5649-2 : 1978 (AMD 3136, 1979) for Lighting Columns

- a. For lighting columns and sign posts the cable entry slot width dimension shall be 75mm. [1309]
1. The positions of proposed lighting units are shown on the Contract drawings.
2. The minimum requirements for the EU Construction Product Directive for Steel and Aluminium road lighting columns are detailed in Table 13/1/0A below. This information is taken from BSEN40-5: Requirements for steel lighting columns and BSEN40-6 Requirements for aluminium lighting columns Table ZA.1

Table 13/1/0A Scope and Relevant Requirement Clauses

Construction Products: Intended Uses:		Galvanised steel lighting columns Road lighting columns circulation areas	
Requirement/ Characteristic	Requirement Clause(s) in this or other European Standard(s):	Mandated level(s) and/or Class(es):	Notes:
Resistance to Horizontal loads	6 & 8		
Performance under vehicle impact (passive safety)	16		
Durability	11	None	50 years

3. The requirements for lighting column Type A are detailed in Table 13/1/1 to Table 13/1/6.

Table 13/1/1 Sheet 1 of 1 Road Lighting Column Information Type A

Item	Requirement
Number of Columns	3 No
Nominal height (Above Ground)	10 m
Root Length	TBC - The root length will be subject to the chosen column
Column material	galvanised Steel
Column Type	Stepped tubular as per column spec Mallatite (Bury sign column B4730)
Bracket projection	None
Post top adaptor Spigot Size	Reducing pot top adaptor with 60mm spigot
Acceptable Luminaire	See Appendix 14/4. [Type 1]
Luminaire weight	8.9 kg
Luminaire windage	0.286 m ²
Luminaire dimensions	(L) 792 mm (W) 361 mm (D) 107 mm
Luminaire installed inclination	0° to the horizontal
Administrative Area	Greater Manchester
Mean hourly wind speed (V_{ref}) and site altitude	V_{ref} 23.5m/s & 174m
Topography factor	1 (column is not located on a slope >5m high)
Terrain category ($C_{e(z)}$)	II
Rationalised wind loading region	Medium
Partial safety factors on loads (f) / deflection class	f = Class B; Class 3 deflection class
Base type	Planted
Ground factor (G) / soil type	To be determined on site by the Contractor or assumed poor
Attachments	TO BE ADVISED MY MALLATITE
Fatigue Requirements	CD354
Backfilling	To be as described in sub-clauses 1305.3, 1305.4, 1305.5 and to the column manufacturer's requirements
Number of doors	One
Door size	As per BMBC spec – Mallatite (bury sign column B4730)
Door orientation	To allow safe hard standing Facing opposite direction to on-coming
Base compartment	To be suitably sized for the provision of all equipment required.
Root protection and finish	As per BMBC spec – Mallatite (bury sign column B4730)

Identification markings / maintenance numbers	In accordance with BMBC Standard Specification
Requirements for earthing	In accordance with BS 7671:2018 and BS 7430:2015
Cable entry slot dimensions	As per BMBC spec – Mallatite (bury sign column B4730)
Overhead power line warning notices (if required)	N/A

4. Lighting column identification markings (maintenance numbers) shall be 50mm high. The contractor shall agree the column numbering with the Overseeing Organisation prior to the commencement of works.
5. All proposed lighting columns shall be specified as Mallatite (Bury sign column) ref B4730 and come complete with a pot top adaptor with a 60mm spigot.
6. The contractor for the works shall liaise with BMBC regarding the procurement of any new lighting columns, the specified lighting columns required are currently held on stock and can be purchased as individual items to overcome any lengthy manufacture lead times.

7. A schedule of proposed lighting units is provided below;

Table 13/1/2 - Road Lighting Column Schedule – Temporary works

Unit Ref On Drawing	Column Type	Luminaire Type
LP05	As Existing to be re-used (EX05)	As existing to be re-used (EX05)

Table 13/1/3 - Road Lighting Column Schedule – Permanent works

Unit Ref On Drawing	Column Type	Luminaire Type
LP01 (Deansgate)	Type A	Type 1
LP01 (Dale Street)	Type A	Type 1
LP02	Type A	Type 1
LP05	As Existing to be re-used (EX05)	As existing to be re-used (EX05)

APPENDIX 13/2: TYPICAL LIGHTING COLUMN AND BRACKET DATA

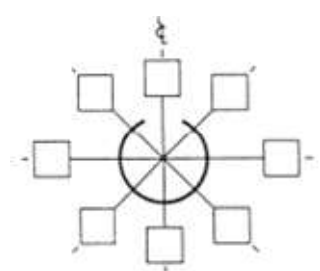
1. The Contractor shall submit to the Engineer data sheets for each column type in accordance with the typical data sheets which are provided as part of Series NG 1300, Volume 2 *Notes for Guidance on the Specification for Highways Works* and repeated below for reference. For guidance on their completion refer to Appendix 13/3.
2. In addition to data sheets, the Contractor shall provide scale drawings of proposed columns and brackets, detailing the appearance and giving all measurements including tube diameters. These shall be submitted together with data sheets to the Engineer for approval prior to the ordering of any columns or brackets.
3. Sample column and bracket data sheets pro forma blanks are annexed to this Appendix. They shall be completed as required by Clause 1303 of the Specification. Instructions for completion of Bracket Data Sheets are contained in Appendix 13/3.

LIGHTING COLUMN AND BRACKET DATA SHEET 1

Name of Manufacturer: 	Column Reference No. Revision No. Date
-----------------------------------	---

NAME OF CONTRACT: Radcliffe Civic Hub

Part A General

Column nominal height	(m)	Acceptable positions of bracket arms relative to door position Door Opening  Any					
Column material							
Material design strength	(N/mm ²)						
No. of door openings							
Door opening size - Height	(mm)						
Width	(mm)						
Cross-section of base compartment	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Height (mm)</td> <td style="width: 33%;">Width (mm)</td> <td style="width: 33%;">Depth (mm)</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	Height (mm)	Width (mm)	Depth (mm)			
Height (mm)	Width (mm)	Depth (mm)					
Manufacturer's drawing ref. no.							

Corrosion protection (steel columns only) – basic system type (sub-Clauses 1911.9 and 1911.10)	
Reference Wind Velocity Vref,0 as defined in BS EN 40-3-1	m/s
Details of signs and attachments allowed for in the design Area (mm ²), Eccentricity (mm), Height	
- additional sacrificial steel thickness, above that needed in design, from the bottom of the column to at least 250 mm above the anticipated ground level	(mm)

Part B Foundation Data

Planted base	Planting depth (m)									
Diameter of concrete surround (if any)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3">Standard Soil Type Factor G</th> </tr> <tr> <td style="width: 33%;">630</td> <td style="width: 33%;">390</td> <td style="width: 33%;">230</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	Standard Soil Type Factor G			630	390	230			
	Standard Soil Type Factor G									
630	390	230								
Flange Plate	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Bolt hole centres (mm)</td> <td style="width: 33%;">Bolt hole diameter (mm)</td> <td style="width: 33%;">Design load/bolt (N)</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	Bolt hole centres (mm)	Bolt hole diameter (mm)	Design load/bolt (N)						
Bolt hole centres (mm)	Bolt hole diameter (mm)	Design load/bolt (N)								
Relevant forces and moments at ground level										
Line of action of max. moment relating to door opening										

NOTE: For flange plates with slotted holes a diagram shall be included with this Data Sheet.

LIGHTING COLUMN AND BRACKET DATA SHEET 2

Part C Acceptable Luminaires

Post Top Column	Luminaire Connection		Luminaire: Maximum Characteristics					
			Terrain Categories as defined in BS EN 40-3-1					
	Diameter	Length	Luminaire Max Wt (kg)	I	II	III	IV	
				Maximum Windage Area (m2) for Terrain Categories as defined in BS EN 40-3-1				

Single Arm Bracket Column	Luminaire Lever Arm (mm)	
	Due to wt. of luminaire	Due to windage on luminaire

Bracket Projection (m)	Ref No.	Drawing No.	Material		Luminaire Fixing Angle	Luminaire Connection		Luminaire Maximum Wt (kg)	Maximum Windage Area (m2) for Terrain Categories as defined in BS EN 40-3-1			
			Grade	Design Strength (N/mm2)		Diameter (mm)	Length (mm)					

Double Arm Bracket Column	Luminaire Lever Arm (mm)	
	Due to wt. of luminaire	Due to windage on luminaire

Bracket Projection (m)	Ref No.	Drawing No.	Material		Luminaire Fixing Angle	Luminaire Connection		Luminaire Maximum Wt (kg)	Maximum Windage Area (m2) for Terrain Categories as defined in BS EN 40-3-1			
			Grade	Design Strength (N/mm2)		Diameter (mm)	Length (mm)					

Part D Certification

It is certified that the information given in this Data Sheet has been obtained in accordance with Departmental Standard CD354 and the Specifications.

Signed on behalf of the Contractor:Date:

APPENDIX 13/3: INSTRUCTIONS FOR COMPLETION OF LIGHTING COLUMN AND BRACKET DATA SHEETS

General

1. When information is not required a dash shall be inserted in the appropriate boxes.
2. Where a Data Sheet is amended it shall be given a new revision with a date.
3. The revisions shall be consecutive letters of the alphabet, commencing with 'A'.
4. The date of the revision shall agree with the date on the Contractor's signature.
5. The column or bracket material shall be as described in Appendix 13/1.
6. The material design strength shall be the minimum specified in the design. Where more than one material is used values for all materials shall be given.
7. All relevant entries shall be made on the Data Sheet before the documents are certified by the Contractor.

Column Data

8. The column nominal height shall be selected from clause 2 or 3 of BS 5649-2:1978 as appropriate.
9. The number of door openings shall agree with the manufacturer's drawing.
10. The cross-section of the base compartment shall be indicated by a dimensioned diagram / sketch.
11. The acceptable positions of bracket arms relative to the door position shall be indicated on the diagram. Where all positions are acceptable the box labelled 'Any' shall be ticked.
12. Where concrete is necessary around the planted base in accordance with sub-clauses 1305.3 and 1305.4. The minimum diameter shall be entered.
13. For flange bases all forces and moments used in the design of the foundations, anchorages and attachment systems shall be given.
14. The corrosion protection system used on the column when new shall be recorded. Where additional steel is provided for sacrificial purposes the amount shall be recorded.
15. The following information regarding signs and attachment shall be stated:
 - a. Sign and attachment surface areas.
 - b. Eccentricities from the centre line of the column to the centre of the area of the sign or attachment.
 - c. Heights above ground level to the centre of the area of the sign or attachment.

Bracket Data

16. The luminaire lever arms, weight and maximum windage area quoted shall be based on the most adverse loading on the bracket when it is attached to any of the columns quoted in the compatible column sections.

(Note: the luminaire lever arms are the horizontal distances from the centre of gravity of the luminaire and the centroid of the windage surface area to the end of the bracket joint.)

APPENDIX 14/1: SITE RECORDS

1. The Contractor shall provide as-built records and drawings based on the construction drawings referenced in Appendix 14/2 and shall be in compliance with the requirements of Clause 1402. The drawings shall be produced in AutoCAD-compatible format and supplied in PDF and AutoCAD-compatible electronic formats. The Contractor's attention is drawn to the need to ensure that the precise location of all cable joints is clearly marked on the as-built drawings.
2. The Contractor shall, prior to carrying out any electrical installation work carry out a site investigation of existing arrangements in feeder pillars, columns and signs to verify that they can be altered to accommodate the proposed new arrangements.
3. ELEXON BSCP520 standard file format doesn't define any rule set for constructing the required 12 digit string for the CMS Unit reference number and the Overseeing Organisation should be consulted to confirm each unique number referenced against the actual numbering system applied on site
4. The Contractor shall supply Electrical Installation Certificates cross-referenced to the apparatus identified on the as-built drawings. Certificates shall be in accordance with BS 7671, Series 1400 and shall be in the form of NICEIC HCN3, the HEA Certificate or equivalent and approved. The certificate shall include the cable sheath test results and earth electrode resistance test results. The Contractor's attention is drawn to sub-Clause 1424.3.
5. The Contractor shall provide a comprehensive Operation and Maintenance Manual for all equipment, to form part of the project Health and Safety File. 3no. physical copies shall be provided, in addition to PDF electronic format copies.
6. Operation and Maintenance Manuals shall include the following:
 - a. Contents and index
 - b. Introduction and design data, where applicable
 - c. Description of the operation of systems
 - d. Schedule of equipment and recommended maintenance
 - e. Schedule of column and bracket identification marks, cross-referenced where appropriate to column maintenance numbers
 - f. Emergency procedures
 - g. Details of equipment suppliers, manufacturers' information, data sheets and quality assurance certification for individual items of apparatus
 - h. Record documentation, test certifications and documents in accordance with the CDM Regulations
7. As-built drawings shall be produced by the Contractor and submitted to the Overseeing Organisation in electronic .dwg format and in scale paper format with the detail described in Clause 1402. Cabling schematics showing the type and size of cabling and fusing arrangements shall also be detailed.

8. The Contractor's BS7671 and NICEIC compliant certificates for electrical inspection and testing shall also be submitted in .pdf and on A4 paper (original copies).
9. The Contractor shall supply Operation and Maintenance manuals to support the Site records. The operation and maintenance manual shall be sufficiently detailed to provide manufacturers catalogue information for every aspect of the installation, plus the records described in the paragraphs above.
10. The Contractor shall retain copies of all records submitted to the Overseeing Organisation.

APPENDIX 14/2: LOCATION OF LIGHTING UNITS AND FEEDER PILLARS

1. The positions and descriptions of proposed lighting units & feeder pillars are shown on the contract drawings.
2. The minimum lighting level requirements for this scheme are detailed in Table A/14/2/1 below.

Table A/14/2/1: Lighting Level Requirements

Location	Lighting Classification (Note 3)	Standard	Justification (Note 1)	Maintenance Factor (Note 2)	Road Surface Category	Q0
Dale Street	P1	BSEN 13201-1-2014	Table 4 parameters for the selection of lighting class P completed. And agreed with BMBC	0.89	C2	0.07
Church Street	P1	BSEN 13201-1-2014	Table 4 parameters for the selection of lighting class P completed. And agreed with BMBC	0.89	C2	0.07

Notes:

1. The lighting classifications shown above have been agreed with BMBC
2. The maintenance factor (MF) has been provided by BMBC.

APPENDIX 14/3: TEMPORARY LIGHTING

1. Temporary lighting, where provided as directed by the Overseeing Organisation, shall conform to the following.
 - a. The Contractor shall ensure that the requirement for temporary lighting and associated power supplies are identified and appraised fully in accordance with guidance within BS5489, CD192 and Chapter 8 Traffic Signs Manual Parts 1 and 2 during preparation of the works programme.
 - b. Where applicable, all temporary electrical power supply networks designed by the Contractor shall comply fully with the requirements of BS 7671. The Contractor's proposals shall be submitted to the Overseeing Organisation, for appraisal, in advance of works commencing on site.
2. Where required temporary lighting shall be provided to the same standard as that of the existing lighting system until the new lighting system is operational or the existing lighting is put back in to service.
3. The Contractor shall submit a complete Design in accordance with Appendices 1/10 to prove the validity of his temporary lighting proposals 28 days prior to the ordering of materials. If no response is received from the Overseeing Organisation within the 28 day period the Contractor shall action his proposal.

APPENDIX 14/4: ELECTRICAL EQUIPMENT FOR ROAD LIGHTING

- All luminaires shall be as detailed on the Contract drawings and Table A/14/4/1
- The requirements for luminaires Type 1- 4 are below in Table A/14/4/1.

Table A/14/4/1: Sheet 1 of 1 Road Lighting Luminaire Information

Luminaire Reference	Type 1
Manufacturer	Signify
Product	DigiStreet Medium
Reference or Model	BGP762 22klm 80 Led DW10 CW (Dimmed to 50% light output – set to 11klm as agreed with BMBC)
Weight	8.9 kg
Windage Area	0.286 m ²
Dimensions	(L) 792 mm (W) 361 mm (D) 107 mm
Mounting	Post-top
Installed inclination	0° to the horizontal
Protector Type	Flat Glass
Finish	N/A
IP Rating	66
Light source	LED CW (5700k)
Optic Setting (matrix)	DW10
Light source wattage/ luminous flux	129w / 22.0 klm
Luminous intensity Class	N/A
No. of LEDs/Drive current (if applicable)	80
Maintenance cycle applied	N/A
Control Gear Type	DALi
Control	City Touch CMS node
PECU Socket	7 Pin NEMA Luminaire Mounted

Method of operation	Dusk til dawn
Unit circuit protective device rating	BS88 6A

3. If the Contractor wishes to deviate from the electrical equipment proposed by the Engineer, then they shall insert in the table A/14/4/1a details of the equipment which they propose to use in the Works and shall submit the information to the Overseeing Organisation BMBC.

Table A/14/4/1a: Sheet 1 of 1 Contractors Alternative Road Lighting Luminaire Information

Luminaire Reference	Type 1
Manufacturer	
Product	
Reference or Model	
Weight	
Windage Area	
Dimensions	
Mounting	
Installed inclination	
Protector Type	
Finish	
IP Rating	
Light source	
Optic Setting (matrix)	
Light source wattage/ luminous flux	
Luminous intensity Class	
No. of LEDs/Drive current (if applicable)	

Maintenance cycle applied	
Control Gear Type	
Control	
PECU Socket	
Method of operation	
Unit circuit protective device rating	

- a. The contractor shall insert in table A/14/4/2 the details of the equipment proposed to be used.

Table A/14/4/2: PECU's

Type	Manufacturer	Catalogue Number
City Touch CMS Node		

Clause 1417 – Base Compartment Fixing Arrangements

- a. All new Assets (excluding wall and pole bracket mounts without the appropriate enclosure) shall incorporate a double pole isolator which is separate to the DNO cut-out.
- b. Double pole isolator units shall comply with BMBC standards.
- c. Double pole isolator units shall be capable of being locked in the off position. Fuses shall be prevented from being removed whilst the unit is in the on position.
- d. Wiring entry points shall be protected by cable grommets.
- e. The contractor shall insert in table A/14/4/3 the details of the equipment proposed to be used.

Table A/14/4/3: Double pole isolator units

Type	Manufacturer	Catalogue Number
*		

Note * the termination types to be used shall be in accordance with BMBC requirements

Ancillary Equipment

- The Contractor shall insert in Table A/14/4/10: Sheet 1 of 1 Ancillary Equipment Information details of ancillary equipment they propose to use in the Works if deviating from the equipment proposed by the Engineer, or where such equipment has not been proposed by the Engineer the Contractor shall insert in Table A/14/4/2: Sheet 1 of 1 Contractors Ancillary Equipment Information.

Control Gear

- LED Luminaire control gear shall also have the facility to monitor the status and condition of the lamp, the lamp dim level, the lamp voltage, the ballast temperature, the power factor and the energy consumed and be compatible with a DALI or 1-10V communication protocol to allow variable light intensity and system monitoring via the Overseeing Organisations preferred Control & Monitoring System provider

Cut-outs, Fuse Holders, Fuses and Miniature Circuit Breakers (MCBs)

- All road lighting cut-outs shall be of the combined single phase and neutral type incorporating an earth terminal and shall be for the termination of cables as identified in the Contract Drawings. Terminals shall be sufficient for the termination of the conductors with a CSA of up to 25mm².
- Lighting columns shall be provided with a full-length backboard of treated hardwood at least equivalent to the door size of the column. The backboard shall be fixed in the base compartment and shall be suitable for the connection of all electrical equipment as required.
- DNO cut-outs shall be located within the base compartment of the associated lighting column.
- No item within the lighting column base compartment shall obscure equipment identification information.
- BMBC road lighting cut-outs shall be to the BMBC adoptable standard.

Surge Protection

- BMBC do not require surge protection to be installed

Internal Wiring

- All wiring and installation of components within lighting columns and lit sign units shall be in accordance with the Contract drawings allowing termination with 3 core flexible

cable (Arctic Grade to BS 6004) according to the rating of the luminaire and column height

Earthing

10. All earthing for lighting columns shall be carried out in accordance with the Contract drawings, this specification, BS 7671:2018 18th Edition IET Requirements for Electrical Installations and BS 7430:2015 Code of Practice for Protective Earthing of Electrical Installations.

Table A/14/4/4: Sheet 1 of 1 Ancillary Equipment

Clause	Item	Manufacturer	Catalogue or type no.	Requirements
1409	Photo-electric control units			20/20 Lux as Table A/14/4/1
1410	Shorting plug			N/A
1411	Time switches			N/A
1412	Ballasts			Electronic and or Dali CMS compatible as Table A/14/4/1
1413	Ignitors			N/A
1414	Starters			N/A
1415	Capacitors			N/A
1416	Cut-outs			Cut-outs suitable for termination of 2x cables (3 if spurring to signs) up to and including 25mm ² 3-core. They shall also be able to accommodate 2x 2.5mm ² 3-core cord supplies to luminaires. Refer to luminaire tables for CPD ratings
	Fuse holders			BS88 Type 2
	Fuse links			N/A
	MCBs			N/A
1419	Wiring			All wiring and installation of components within lighting columns and lit sign units shall be in accordance with the Contract drawings.

Cables and Cable Joints

11. Cables to be used shall be as detailed in Table A/14/4/4 within this appendix.

Table A/14/4/5: Sheet 1 of 1 Cable

Table A/14/4/11					
Location of Cables	Cable Type	No. of Cores	Contractor Proposals		Note
			Manufacturer	Catalogue No. Reference No. or Name of Cable	
Road Lighting Columns	1.5mm ² Arctic Grade to BS 6004 (6, 8 & 10m columns)	3			Internal Wiring

12. The Contractor shall insert below in Table A/14/4/11 within this appendix details of cable to use in the Works if deviating from the equipment proposed by the Engineer, or where such equipment has not been proposed by the Engineer.

APPENDIX 19/1: PROTECTION OF STEELWORK AGAINST CORROSION

Table A/19/1/1: Table 1 of 1

(SPECIFICATION FOR HIGHWAY WORKS) Sheet No.
FORM HA/P1 (NEW WORKS) PAINT SYSTEM SHEET

1. CONTRACT TITLE: STRUCTURE. NO.: 10m lighting columns GRID REF.:				
2. DATE OF ISSUE OF DOCUMENTS TO TENDERERS:				
3. ENVIRONMENT AND ACCESSIBILITY: Inland Difficult				
4. REQUIRED DURABILITY OF SYSTEM: NO MAINTENANCE: 8. YEARS MINOR MAINTENANCE: 8 YEARS MAJOR MAINTENANCE: 15. YEARS			5. COLOUR OF FINISH: Galvanised steel	
6. PAINT SYSTEM TO BE APPLIED OVER: AREA REF: AREA DESCRIPTION: PROTECTIVE SYSTEM TYPE: (i.e. I, II etc): G2a				
7. DETAILS	1 st Coat	2 nd Coat	3 rd Coat	4 th Coat
Registered Description Item No. and Colour BBA HAPAS Roads and Bridges Certificate Reference (05/05) Brand Name and Manufacturer's Ref. No. Manufacturer's Data Sheet No. Where applied How applied Min dry film thickness (mdft) (08/14) Max local dft Estimated total volume of paint likely to be used. (litres) 'A' type testing required ? (YES/NO) (See CI 1912.3) 'B' type testing required? (YES/NO) (See CI 1912.10) (05/05)				
8. (05/05) STRIPE COAT DESCRIPTION (Including Item No. and colour Workshop: Site:			9. PAINT MANUFACTURER'S OFFICIAL STAMP:	
10. Mdft (µm) NOTE. (08/14) The minimum total dry film thickness of the paint system, neglecting primers and sealers under 30 microns, shall not be less than the minimum value given for the paint system in Tables 19/2B, 19/3B or 19/4C as appropriate.			11. APPROVED BY: DATE	