South Wales Trunk Road Agent

Managing and Improving Motorways and Trunk Roads through South Wales

Asiant Cefnffyrdd De Cymru

Rheoli a Gwella'r Traffyrdd a'r Cefnffyrdd yn Ne Cymru

M4 41-42 81 River Neath Crossing Underslung Walkway and Miscellaneous Repairs Specification 2021/2022

Neath Port Talbot County Borough / Bwrdeistref Sirol Castell-nedd Port Talbot

Yn gweithio ar ran Llywodraeth Cymru
Working on behalf of the Welsh Government

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M4 41-42 81 River Neath Crossing

Underslung Walkway and Miscellaneous Repairs

Specification 2021/2022

Service Provider/Consultant Name:		AECOM	
Service Provider/Consultant Project Number: 60522246			
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South Wales Trunk Road Agent			
	Name	Signature	Date
Reviewed by:	.....	.....	.....

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Contents

1 Works Information

1.1 Description of the Works

1.1.1 Project Location

River Neath Crossing forms part of the M4 and crosses the River Neath (Grid Reference 273295E, 193956N). Figure 1 shows a plan location of the structure.

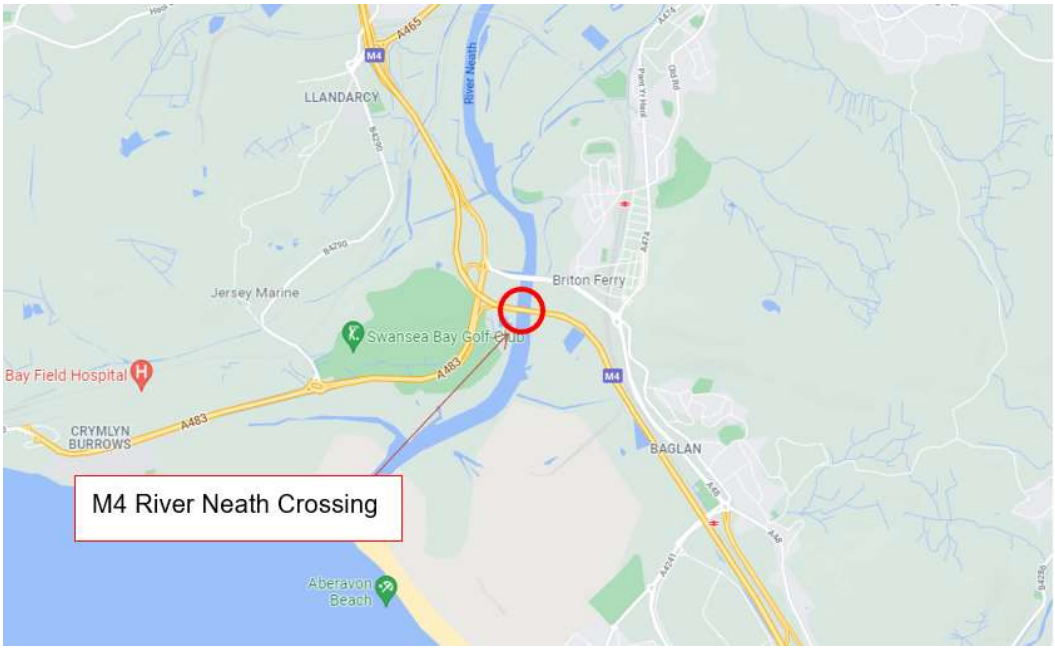


Figure 1: Site Location

1.1.2 Description of the Structure

The M4 River Neath Crossing is constructed from several structural forms. The central structure (No.6) comprises a 7-span steel and concrete composite superstructure consisting of 8 No. fabricated girders and a reinforced concrete deck, supported on reinforced concrete columns/piers and a reinforced concrete abutment at its western end. The bridge has an overall length of 396m. The superstructure is continuous over piers 2, 4, 5, & 7 with expansion joints provided at piers 1, 3, 6 & 8. There are 8 No. access walkways slung under the bridge which run along the side of the main girders.

The structure was constructed circa 1994.

The underslung walkways consist of transverse spanning open grid galvanised steel flooring, which is supported directly from the web of the main girders by means of an angle welded to the main girder and a longitudinal beam, which is located 885mm from the centreline of the main girder. The longitudinal beam is supported in turn from steel channel and tee sections which cantilever from the main girder web stiffeners and the main girder cross bracing, supported by bolted connections.

A tubular handrail system runs along the edge of the walkways.

1.1.3 Description of the Project

The access walkways require the following repairs:

- Replace all walkway gratings and clips with galvanised steel on a like for like basis.
- Clean and paint all areas of localised paint loss to the handrails (or like for like replacement if corrosion is too extensive).
- Replace pins to the base of the handrail posts.
- Repair seepage from service ducts.
- Repair defective downpipe sections.
- Install flashing below expansion joint at Pier 6.
- Clean and paint all angle supports welded to main girder web.
- Replace missing signage.

2 Specification

2.1 Preamble to the Specification

1. The Specification referred to in the Tender 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:

    (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 contract specific Numbered Appendices listed in Appendix 0/3;
    (iv) 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. The term 'Supervisor' refers to 'AECOM'. Other than where references to the Supervisor are made in the context of the Supervisor granting statutory or type approvals, the roles and functions of the Supervisor shall be undertaken by the Project Manager. Where the Specification requires the provision of documentation to the Supervisor for statutory or type approval such documentation shall be provided to the Project Manager.

13. Where the Specification requires the provision of documentation to the Overseeing Organisation for statutory or type approval such documentation shall be provided to the Project Manager.

14. 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 Supervisor as stated in paragraph 12 above shall be further amended as follows:

    a) (02/16) If any agreement, consent or approval required to be obtained from the Supervisor 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 agreement, consent, approval shall be obtained from the Project Manager.

15. 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.

2.2 Specification for Highway Works – Schedule of Pages and Relevant Publication Dates

Series/Appendix	Page Number	Publication Date
000	1 to 3	May 2014
000	6 to 7F	February 2016
000	4 to 5	November 2021
100	1 to 2, 4 to 9, 12 to 29F, WF1, N2 to N11F	May 2014
100	3, 10 to 11, N1	December 2014
200	1 to 3F	February 2016
300	1	May 2001
300	4	November 2002
300	2 to 3, 5 to 6F	May 2008
400	1, 9 to 11, 13, 17 to 20, 21, 23F	May 2017
400	2 to 8, 12,14 to 16, 22	March 2020
500	1 to 2, 4 to 39F, N1 to N2F	February 2020
500	3	March 2020
600	1 to 68, 70 to 77F, S1 to S4F, W1 to W4F, N1 to N5F	February 2016
600	69	February 2017
700	1 to 36F, N1 to N6F	February 2016
800	1 to 42F	November 2021
900	1 to 83F, S1 to S3F, W1 to W2F, N1F	July 2021
1000	3 to 33	January 2020
	1 to 2, 34 to 58F	November 2021
1100	1 to 16F	February 2021
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	1 to 31F	February 2017
1600	1, 4 to 5, 9, 15, 17 to 18, 24 to 26, 29 to 31, 35, 38, 49F	March 1998
1600	2, 6 to 8, 10 to 14, 16, 19, 27 to 28, 32 to 34, 36 to 37, 39 to 42, 44 to 48	November 2003
1600	3, 20 to 23, 43	November 2005
1700	2, 4, 6 to 7, 19, 24 to 27, 30 to 34	December 2014
1700	1, 3, 5, 8 to 18, 20 to 23, 28 to 29, 35 to 39F	March 2020
1800	1 to 39F	April 2021

1900	1 to 35F, S1 to S2F	August 2014
2000	1, 3 to 4F	May 2001
2000	2	November 2004
2100	1 to 2F	February 2016
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	2 to 4	November 2003
2600	5	November 2004
2600	6	May 2005
2600	7F	November 2006
2600	1, 8F	March 2020
3000	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
5700	1 to 30F	February 2020
Appendix A	1 to 4F	May 2014
Appendix B	1 to 3F	May 2014
Appendix C	1 to 2F	May 2014
Appendix D	1F	May 2014
Appendix D (NI)	N1F	May 2014
Appendix E	1F	May 2014
Appendix F	1 to 60F	November 2021
Appendix G	Not used	
Appendix H	1	May 2004
Appendix H	2	November 2005
Appendix H	3	November 2006
Appendix H	4 to 9F	November 2008

2.3 Appendices

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 number following
Series 100		
170AR	Health and Safety	9
171AR	Risk Assessment	10
172AR	Defect Survey	11
Series 500		
570AR	Drainage and Service Ducts Works	11
Series 2300		
2370AR	Ancillary Drainage Beneath Expansion Joint	11
Series 2500		
2570AR	Walkway and Handrailing Works (including design requirements)	11

List of Substitute Clauses, Tables and Figures

Clause No.	Title	Written on Page number following
N/A	Not used	N/A

List of Cancelled Clauses, Tables and Figures

Clause No.	Title	
N/A	Not used	N/A

Additional Clauses, Tables and Figures

SERIES 100 PRELIMINARIES	
Clause No.	**Title and Written text**
170AR	**Health and Safety** Health and Safety - Safe systems of work and method statements. 1. The Contractor is to appoint to the site a suitably qualified, specifically trained person to act as a Safety Supervisor. This person is to be present on site:- (i) When certain operations are being carried out that can be considered to involve more risk or difficulty than normal (these to be agreed), to ensure that the Contractor adheres to the prepared Method Statement (See 2); (ii) At other times as reasonably practised in his capacity as supervisor or; (iii) When specifically requested by the Project Manager. When the Safety supervisor is away from the site a telephone contact number is to be given to the Project Manager. 2. Section 2(2) of the HSW Act requires the provision of safe systems of work and the preparation of method statements by the Contractor is generally considered to be an important step in complying with that obligation. 3. Additionally under **the contract** it will be a requirement that Method Statements will be submitted to the Project Manager by the Contractor to demonstrate his intentions in ensuring health and safety for certain agreed operations. These operations will be those involving a greater than normal risk or difficulty and will be identified and agreed between the Project Manager and Contractor as soon as possible after the award of the contract. The Project Manager may also request Method Statements from the Contractor for other site operations at any time during the contract. 4. The Project Manager may inform the Contractor in writing within a reasonable period after receipt of the method statement where in the opinion of the Project Manager it fails to comply with the HSW Act; the Contractor shall not unreasonably refuse to amend the method statement accordingly. 5. The Contractor shall not subsequently change the Method Statement without the prior knowledge and consent in writing of the Project Manager which shall not be unreasonably withheld. 6. The Contractor is invited to note the requirements stated in the Construction Regulations, General Provisions - C(GP)24 (Prevention of Drowning) and in HSE Guidance Notes GS29/1-4 (Demolition).

	7. At all times, the 'standard' i.e. the Contractor's system of work complying with the HSW Act shall be considered to be the minimum to work from, not the standard to come up to. 8. The Contractor should also note the requirements laid out in Appendix 1/17 relating to Traffic Safety and Management. Nothing in this Clause shall relieve the Contractor from his general obligations under the contract nor is it intended to relieve the Contractor or Employer from their obligations under general law.
171AR	**Risk Assessment** 1. The Contractor shall, before commencement of any work forming part of the contract, ensure that all works comprising the contract are assessed for their risks in accordance with the general requirements of the Management of Health and Safety at Work Regulations 1999. 2. Furthermore, the contractor shall also ensure the safety of his employees and others who may be affected by his work activity by conducting risk assessment, as required by the following Health and Safety Regulations:- (i) The Control of Substances Hazardous to Health Regulations 1988. (ii) Manual Handling Operations Regulations 1992. (iii) Health and Safety (Display Screen Equipment) Regulations 1992. (iv) The Provision and Use of Work Equipment Regulations 1992. (v) Personal Protective Equipment at Work Regulations 1992. (vi) The Noise at Work Regulations 1988. 3. The Contractor shall, before the commencement of any works associated with the contract, provide to the Project Manager, copies of all risk assessments prepared in accordance with the requirements of the preceding paragraph of this clause if requested to do so. 4. Where throughout the duration of the contract, any of the risk assessments prepared in accordance with the requirements of this clause, are in any way modified or amended, the Contractor shall provide a copy of any such amendment or modification to the Project Manager. 5. The Contractor shall ensure that, prior to the commencement of any work on the part of any Sub-Contractor in relation to the contract; the Sub-Contractor carries out risk assessments in accordance with requirements of the aforementioned paragraph and submits the risk assessment to the Contractor. The Contractor shall ensure that any risk assessment submitted by a Sub-Contractor is sufficient to meet the requirements of the Regulations under which they are made and are in accordance with any assessments made by the Contractor. 6. The Contractor shall provide to the Project Manager copies of all assessments provided by any Sub-Contractor.

	7. The Contractor shall ensure that, prior to the commencement of any works associated with the contract; all information contained in the risk assessment is relayed to all workers who may be affected. 8. Furthermore, the Contractor shall ensure that all risk assessments carried out by any Sub-Contractor shall be brought to the attention of workers who may be affected by any such risk assessment. 9. Where the Project Manager is dissatisfied with the suitability or sufficiency of any risk assessment submitted by the Contractor, the Contractor shall revise the risk assessment and in doing so shall comply with any direction given by the Project Manager.
172AR	**Defect Survey** 1. Defect survey to be undertaken in accordance with Appendix 1/70AR.
SERIES 500 DRAINAGE AND SERVICE DUCTS	
Clause No.	**Title and Written text**
570AR	**Drainage and Service Ducts Works** 1. The repairs to the drainage down pipes and the leaks from the service trough shall be undertaken in accordance with Appendix 5/70AR.
SERIES 2300 BRIDGE EXPANSION JOINTS AND SEALING OF GAPS	
Clause No.	**Title and Written text**
2370AR	**Ancillary Drainage Beneath Expansion Joint** 1. The works to the drainage beneath the expansion joint shall be provided in accordance with Appendix 23/70AR.
SERIES 2500 SPECIAL STRUCTURES	
Clause No.	**Title and Written text**
2570AR	**Walkway and Handrailing Works (including design requirements)** 1. The works to the walkway and handrail shall be undertaken in accordance with Appendix 25/70AR.

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

Appendix 0/3 is comprised of two lists, A and B, of Numbered Appendices as follows:
List 'A' is a complete list of the Numbered Appendices referred to in the Specification for Highway Works.

Guide to types of Numbered Appendices – who compiles/completes

(Co) Compiler compiles: Identified in the Noted for Guidance examples by the term "Sample" included in their title.

(Co/C)Compiler partially completes and Contractor completes and returns to Overseeing Organisation

(C) Contractor compiles and returns to Overseeing Organisation

(P) This indicates the Appendix is a national proforma and format must not be altered.

List 'B' gives the list of Contract specific Numbered Appendices devised for the Contract.

List 'A': List of Numbered Appendices Referred to in the Specification for Highway Works

Appendix No.	Title	Completed By
	INTRODUCTION	
0/1	Contract-specific Additional, Substitute and Cancelled Clauses, Tables and Figures Included in the Contract	(Co)
0/2	Contract-specific Minor Alterations to Existing Clauses, Tables and Figures Included in the Contract	Not Used
0/3	List of Numbered Appendices Referred to in the Specification and Included in the Contract	(Co)
0/4	List of Drawings Included in the Contract	(Co)
0/5	Special National Alterations of the Overseeing Organisations of Wales	Not Used
	PRELIMINARIES	
1/1	Temporary Accommodation and Equipment for the Overseeing Organisation	Not Used
1/2	Vehicles for the Overseeing Organisation	Not Used
1/3	Communication System for the Overseeing Organisation	Not Used
1/4	Working and Fabrication Drawings	(Co)
1/5	Testing to be Carried out by the Contractor	(Co)

1/6	Supply and Delivery of Samples to the Overseeing Organisation	Not Used
1/7	Site Extent and Limitations on Use	(Co)
1/8	Operatives for the Supervisor	Not Used
1/9	Control of Noise and Vibration	(Co)
1/10	Permanent Works to be Designed by the Contractor	(Co)
1/11	Temporary Works Design	(Co)
1/12	Setting Out and Existing Ground Levels	Not Used
1/13	Programme of Works	Not Used
1/14	Payment Applications	Not Used
1/15	Accommodation Works	(Co)
1/16	Privately and Publicly Owned Services and Supplies	Not Used
1/17	Traffic Safety and Management	(Co
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	Not Used
1/22	Progress Photographs	Not Used
1/23	Risks to Health and Safety from Materials or Substances	(Co)
1/24	Quality Management System	Not Used
1/25	Temporary Closed Circuit Television (CCTV) System for the Monitoring of Traffic	Not Used
1/26	Temporary Automatic Speed Camera System for the Enforcement of Mandatory Speed Limits at Road Works (TASCAR)	Not Used
1/27	Temporary Automatic Speed Camera System for the Enforcement of Mandatory Speed Limits at Road Works (TASCAR) - Particular Requirements	Not Used
	SITE CLEARANCE	
2/1	List of Buildings, etc. to be Demolished or Partially Demolished	(Not Used)
2/2	Filling of Trenches and Pipes	Not Used
2/3	Retention of Material Arising from Site Clearance	Not Used
2/4	Explosives and Blasting	Not Used
2/5	Hazardous Materials	Not Used
	FENCING	
3/1	Fencing, Gates and Stiles	Not Used

	(05/04) ROAD RESTRAINT SYSTEMS (VEHICLE AND PEDESTRIAN)	
4/1	(05/04) Road Restraint Systems (Vehicle and Pedestrian)	Not Used
4/2	(05/04) Information Required to Demonstrate Compliance of Road Restraint Systems to BS EN 1317-1, BS EN 1317-2, BS EN 1317-3 and DD ENV 1317-4: 2002	Not Used
	DRAINAGE AND SERVICE DUCTS	
5/1	Drainage Requirements	Not Used
5/2	Service Duct Requirements	Not Used
5/3	Surface Water Channels and Drainage Channel Blocks	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
	EARTHWORKS	
6/1	Requirements for Acceptability and Testing etc. of Earthworks Materials	Not Used
6/2	Requirements for Dealing with Class U1B and Class U2 Unacceptable Materials (11/04)	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	Not 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
6/14	Limiting Values for Pollution of Controlled Waters (11/06)	Not Used

6/15	Limiting Values for Harm to Human Health and the Environment (11/04)	Not Used
	ROAD PAVEMENTS - GENERAL	
7/1	Permitted Pavement Options (Schedules 1, 2, 3, 4 and 5)	Not Used
7/2	Excavation, Trimming and Reinstatement of Existing Surfaces	Not Used
7/3	Surface Dressing - Performance Specification (Sheets 1, 2 and 3)	Not Used
7/4	Bond Coats, Tack Coats and Other Bituminous Sprays (Sheets 1, 2 and Binder Data Sheet)	Not 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 (Sheets 1, 2 and 3)	Not Used
7/8	Not Used	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 Aggregate and Recycled Concrete Aggregate (11/04)	Not Used
7/11	Overband and Inlaid Crack Sealing Systems	Not Used
7/12	Arrester Beds	Not Used
7/13	Saw-Cut Crack and Seal Bituminous Overlays on Existing Jointed Concrete Pavements	Not Used
7/14	Preparation of Jointed Concrete Pavements Prior to Overlaying and Saw-Cut and Seal of the Bituminous Overlay (11/03)	Not Used
7/15	Saw-Cut, Crack and Seat Existing Jointed Reinforced Concrete Pavements (11/03)	Not Used
7/16	Cracking and Seating of Existing Jointed Unreinforced Concrete Pavements and CBM Bases	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 and Binder Data Sheet)	Not Used
7/22	Repairs to Potholes (11/03)	Not Used

	ROAD PAVEMENTS - CONCRETE AND CEMENT BOUND MATERIALS	
10/1	Plant and Equipment for the Construction of Exposed Aggregate Concrete Surface	Not Used
	KERBS, FOOTWAYS AND PAVED AREAS	
11/1	Kerbs, Footways and Paved Areas	Not Used
11/2	Access Steps	Not Used
	TRAFFIC SIGNS	
12/1	Traffic Signs: General Part 1,2,3	(Co)
12/2	Traffic Signs: Marker Posts	Not Used
12/3	Traffic Signs: Road Markings and Studs	Not Used
12/4	Traffic Signs: Cones, Cylinders, FTDs 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
	ROAD LIGHTING COLUMNS AND BRACKETS, CCTV MASTS AND CANTILEVER MASTS (11/03)	
13/1	Information to be Provided When Specifying Lighting Columns and Brackets	Not Used
13/2	(Specification for Highway Works) Typical Lighting Column and Bracket Data Sheets 1 and 2	Not Used
13/3	Instructions for Completion of Lighting Column and Bracket Data Sheets	Not Used
13/4	Information to be Provided When Specifying CCTV Masts	Not Used
13/5	(Specification for Highway Works) Typical CCTV Mast Data Sheet	Not Used
13/6	Instructions for Completion of CCTV Mast Sheets	Not Used
13/7	Information to be Provided When Specifying Cantilever Masts (11/03)	Not Used
13/8	(Specification for Highway Works) Typical Cantilever Masts Data Sheets 1 and 2 (11/03)	Not Used
13/9	Instructions for Completion of Cantilever Masts Data Sheets (11/03)	Not Used
	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
14/5	Electrical Equipment for Traffic Signs	Not Used
	MOTORWAY COMMUNICATIONS	
15/1	Motorway Communications	Not Used
15/2	Cable Duct Requirements	Not Used
	PILING AND EMBEDDED RETAINING WALLS	
16/1	General Requirements for Piling and Embedded Retaining Walls	Not Used
16/2	Precast Reinforced and Prestressed Concrete Piles and Precast 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
	STRUCTURAL CONCRETE	
17/1	Schedule for the Specification of Designed Concrete (05/06)	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 (05/02)	Not Used
17/6	Grouting and Duct Systems for Post-tensioned Tendons	Not Used

	STRUCTURAL STEELWORK	
18/1	Requirements for Structural Steelwork	Not Used
	PROTECTION OF STEELWORK AGAINST CORROSION	
19/1	(Specification for Highway Works) Form HA/P1 (New Works) Paint System Sheet	(C/P)
19/2	Requirements for Other Work	Not Used
19/3	(Specification for Highway Works) Form HA/P2 Paint Data Sheet	(C/P)
19/4	(Specification for Highway Works) Form HA/P3 Paint Sample Despatch List: Sheets 1 and 2	(C/P)
19/5	General Requirements	Not Used
	WATERPROOFING FOR CONCRETE STRUCTURES	
20/1	Waterproofing for Concrete Structures	Not Used
	BRIDGE BEARINGS	
21/1	Bridge Bearing Schedule	Not Used
	NOT USED	
22/1	(05/04) Not Used	Not Used
	BRIDGE EXPANSION JOINTS AND SEALING OF GAPS	
23/1	Bridge Deck Expansion Joints Schedule	Not Used
23/2	Sealing of Gaps Schedule (Other than in Bridge Deck Expansion Joints)	Not Used
	BRICKWORK, BLOCKWORK AND STONEWORK	
24/1	Brickwork, Blockwork and Stonework	Not Used
	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
	MISCELLANEOUS	Not Used
26/1	Ancillary Concrete	Not Used
26/2	Bedding Mortar	Not Used
26/3	Cored Thermoplastic Node Markers	Not Used
	LANDSCAPE AND ECOLOGY	
30/1	General, sheets 1, 2 and 3	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, sheets 1 and 2	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
	MAINTENANCE PAINTING OF STEELWORK	
50/1	(Specification for Highway Works) Form HA/P1 (Maintenance) Paint System Sheet	(C/P)
50/2	Requirements for Other Work	Not Used
50/3	(Specification for Highway Works) Form HA/P2 Paint Data Sheet	(C/P)
50/4	(Specification for Highway Works) Form HA/P3 Paint Sample Despatch List: Sheets 1 and 2	(C/P)
50/5	General Requirements	(C/P)
	CONCRETE REPAIRS	
57/1	Repair Product – Requirements	Not Used
57/2	Requirements for Reinforcement	Not Used
57/3	Execution of Concrete Repairs	Not Used
57/4	Sprayed Concrete	Not Used
57/5	Concrete Injection	Not Used
57/6	Contractor Investigation of Concrete Condition	Not Used
57/7	Requirements for Galvanic Anodes	Not Used

List 'B': List of Contract Specific Numbered Appendices Devised for the Contract

Appendix No.	Title	Completed By
	PRELIMINARIES	
1/70AR	Defect Survey	(Co)
	DRAINAGE AND SERVICE DUCTS	
5/70AR	Drainage and Service Duct Repairs	(Co)
	BRIDGE EXPANSION JOINTS AND SEALING OF GAPS	
23/70AR	Expansion Joint Repairs	(Co)
	SPECIAL STRUCTURES	
25/70AR	Handrailing and Walkway Works	(Co)

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

Contract Specific Drawings

Drawing No.	Drawing Title
60522246-21-SW-CC2-005a-DWG-001	**M4 River Neath Crossing** **Underslung Walkway and Misc Repairs**

Contract-specific Works Information

Drawing No.	Title
None	

For structure specific as-built and existing services information drawings, reference must be made to the Pre-Construction Information (60522246- 21-SW-CC2-005a-PCI-001).

Standard Drawings

Drawing No.	Title
None	

Brought into the Contract by Reference

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

Drawing Number	Title	Date	Aspect / Alternative(s) required if not whole Drawing.
None			

APPENDIX 1/4 – WORKING AND FABRICATION DRAWINGS

1. The Contractor shall supply two sets of drawings associated with the permanent works design elements identified in Appendix 1/10 as per the table below:

Series	Description of Work	Minimum period for submission of drawings prior to commencement	Period for *Project Manager's* Response
2500	Handrailing and Walkway	2	2

2. In addition to the Temporary works AIP the Contractor shall supply two sets of drawings and certificates associated with the temporary works design elements identified in Appendix 1/11 as per the table below:

Series	Description of Work	Minimum period for submission of drawings prior to commencement	Period for *Project Manager's* Response
100	Temporary Works	2	2

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

General

1. Unless otherwise stated in Table 1/5, 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 (See sub-Clause 105.4).
3. (N) indicates that a UKAS or equivalent accredited laboratory sampling and test report or certificate is required.
4. Unless otherwise shown in this Appendix tests for work, goods or materials as scheduled under any one Clause are required for all such work, goods or materials in the Works.
5. 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

Clause	Work, Goods or Material	Test	Frequency of Testing	Test Certificate	Comments
Series 1900					
1909	Galvanised Coatings	Tests specified in BS EN ISO 1461	As required		
	Thermally sprayed aluminium metal coatings	Tests specified in BS EN ISO 2063	As required		
	Aluminium coating material			Required in accordance with BS EN ISO 14919	
1910	Thermally sprayed aluminium metal coating	Tensile test specified in BS EN 22063	At the start of the works and [specify subsequent intervals]		
1911, Table 19/2B	Hot dip galvanised coating to fasteners	Tests specified in BS EN ISO 10684	As required		
1912 1912SE	Paints - 'A' and 'B' samples	Provision of samples for 'A' and 'B' sample tests			Samples selected in accordance with Clauses 1912 and 1912SE
	Paints - 'A' and 'B' samples	Specific gravity	As required by rate of 'A' and 'B' sampling		See NG 1912, 3; Appendix 19/4, Note 4; Appendix 19/4SE, Note 4; NG 1912.3NI, 3 and Appendix 19/4NI
	Paints - 'A' and 'B' samples	Colour match	As required by rate of 'A' and 'B' sampling		See NG 1912, 3 and NG 1912NI, 3
1914	Coating system minimum film thicknesses	Minimum dry film thickness measurements. In accordance with BS EN ISO 2808, BS3900-C5	Required – representative testing		
	Coating system adhesion	Pull off adhesion test in accordance with ASTM D4541 – Type III	Required – representative testing		
	Coating system defects	Visual assessment supplemented by appropriate testing	Required		
	Coating system defects – pinholing or porosity	Low or high voltage detectors in accordance with ASTM G62-07	Required – representative testing excluding corners, bolted joints or welds		

Table 1/5 continued

Clause	Work, Goods or Material	Test	Frequency of Testing	Test Certificate	Comments
Series 5000					
5005	Aluminium and zinc spray coatings	Tests specified in BS EN 22063	As Required		Areas to be tested in accordance with Clause 5006
	Aluminium coating material			Required (BS EN 1301-1)	
	Zinc coating material			Required (BS EN 1179)	
5006	Metal spray coatings	Tensile test specified in BS EN 22063	As Required		Test to be carried out by contractor
		Grid test specified in BS EN 22063	As Required		Test to be carried out by contractor
#5007, 5007SE	Paints				
	'A' and 'B' Samples	Specific Gravity	In accordance with clauses #5007 and 5007SE		Samples will be selected in accordance with Clauses #5007 and 5007SE
		Colour Match			
		Composition			
		Application Characteristics			

APPENDIX 1/7 – SITE EXTENT AND LIMITATIONS ON USE

Site Extent

1. The repair works are limited to:
    - The access walkways and associated elements
    - Expansion joints (access from underneath the bridge deck)
    - Service trough and drainage (accessed from underneath the deck and the carriageway)
2. Unless agreed otherwise by the Supervisor, the Site shall be defined as the underside of the existing structure between Pier 1 (west abutment) and Pier 8 and the M4 Carriageway. The approximate site extent is outlined in red in the figure below.

Figure 2: Approximate Site Extent

3. If the Contractor wishes to make use of land outside the site boundary they shall negotiate this with the relevant land owners (Adjacent Land ownership is provided on plan in Appendix 1/15).
4. The Contractor shall minimise disruption on the site and shall remove all plant, equipment and materials as soon as the works have been completed.

Limitations on Use

1. The Contractor shall maintain the site in a clean and tidy state by removing rubbish and debris from the site to a licensed tip off site.
2. The Contractor shall not under any circumstances use areas other than those previously allocated by the Supervisor for parking vehicles or storage of plant and materials.
3. Upon completion of the works, the Supervisor shall ensure that any areas used in the pursuit of the works, including site compounds and materials storage, is restored to a condition similar to that existing at the commencement of the works.

APPENDIX 1/9 – CONTROL OF NOISE AND VIBRATION

Noise and Vibration

1. The Contractor is to consider noise and vibration disturbance in areas that are accessible to third parties including the land immediately below the structure.

2. The Contractor is not under any circumstances permitted to undertake any work that may cause noise or vibration disturbance outside of agreed working area.

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

1. The elements of the works listed in Table below are to be designed by the Contractor (or their appointed manufacturer):

Elements	Location	Design Specification
Steel Walkway grating and clips	Access Walkway	Appendix 25/70AR
Replacement handrail where required	Access Walkway	Appendix 25/70AR

2. The Contractor shall allow sufficient time (as presented in Appendix 1/4) for the Project Manager to accept the Contractor's design submission.
3. Work shall only commence on the structural elements and other features to be designed by the Contractor after the Project Manager's acceptance of the Contractor's design submission.

APPENDIX 1/11 – TEMPORARY WORKS DESIGN

1. Contractor to be responsible for design of all temporary works required for the permanent works, including:
   i. Working at height safety support for harness.
   ii. Access platform to paint access walkway support angle.
   iii. Access platform to repair drainage pipes, service troughs and expansion joints where required.
2. In order to facilitate the works the contractor may install a temporary platform beneath the existing access walkway which shall have the following constraints:
   i. Access platform to have a maximum weight of 0.2kN/m^2.
   ii. Access platform to the supported from the bottom flange at a distance less than 100mm from the face of the main girder web.
   iii. Live loading on the access platform is limited to 1.5kN/m^2.
3. As the access platforms are supported from the existing structure which will be carrying traffic during the duration of the works the temporary works will be Type P proposals (Category 1) in accordance with CG300, including the preparation of a separate Approval in Principle (AIP) to the permanent works AIP.

APPENDIX 1/15 – ACCOMODATION WORKS

1. This Appendix contains details of third parties affected by the Works and details of arrangements that have been agreed.
2. The Contractor shall make arrangements with the Third Parties and others, for the co-ordination of his work.
3. The names, addresses and telephone numbers of the parties affected by the Works, are listed in the Table below.

Name	Address	Contact	Action Required
Monkton Sailing Club	Jersey Marine, Neath, SA10 6NG	TBC	Contact to be made prior to works commencing for briefing. Regular liaison meetings to be held with party throughout duration of the works if requested.
Neath Port Talbot County Borough Council	The Quays, Brunel Way, Neath, SA11 2GG	estates@npt.gov.uk	Contact to be made prior to works commencing for briefing. Regular liaison meetings to be held with party throughout duration of the works if requested.
Neath Port Authority	Woodfield House, Castle Walk, Neath, SA11 3LN	R Minty portofneath@btconnect.com 01639 633 486	Contact to be made prior to works commencing for briefing. Regular liaison meetings to be held with party throughout duration of the works if requested.
Natural Resources Wales	Maes Newydd, Llandarcy, Neath Port Talbot, SA10 6JQ	marinelicensing@ naturalresourceswales.gov.uk	Works to be undertaken in accordance with Marine Licence. Contact to be made prior to works commencing for briefing. Regular liaison meetings to be held with party throughout duration of the works if requested.

4. Land Ownership details are provided in the Table and Figure below:

Plot No	Title Number	Tenure Type	Registered Owner
1	CYM21126	Freehold	Welsh Government
2	CYM48586	Freehold	Monkton Sailing Club, Jersey Marine, Neath, SA10 6NG
3	CYM346930	Freehold	Welsh Government
4	Various	N/A	Neath Port Talbot County Borough Council

Figure 3: Land Ownership Plan

APPENDIX 1/17 – TRAFFIC SAFETY AND MANAGEMENT

1. Submission of Traffic Management Proposals

The Contractor shall liaise with the adjacent landowners (refer to Appendix 1/15) and provide traffic management proposals to the Project Manager two weeks prior to installation on site.

2. Traffic Safety and Management Requirements and Constraints

The works will require to be undertaken above two private roads at the following locations as follows:

Span No	Description	Constraint
Span 1	Private Road to Marina south of River Neath Crossing	Road to remain open during works with traffic management required on private road to facilitate works in the span above
Span 6	Private Road Wharf Road, Briton Ferry, Neath	Road may be closed for short duration to facilitate works in the span above. Temporary diversion will be required.

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

Control of Substances Hazardous to Health (COSHH)

1. The Contractor shall prepare and submit relevant COSHH information to the Supervisor prior to commencement of the works.
2. The Contractor shall ensure that all necessary steps have been taken to reduce the risk of any hazardous substances or any materials that are likely to cause harm.
3. The Contractor shall ensure that any hazardous waste materials are removed from site and disposed of accordingly.
4. The Contractor shall ensure that hazardous materials are stored correctly on site and spill kits are made available, if necessary, to prevent any ingress to the existing drainage system.
5. The Contractor shall protect the works so that dust and paint particles form the removal of the existing paint protection system and the application of the new paint system are contained.

APPENDIX 1/70AR – DEFECT SURVEY

1. Prior to undertaking any works, the Contractor shall undertake a survey of the following defects do determine the extent of the defects:
   - Handrail corrosion including sections identified for replacement
   - Locations of leaks from the service trough
   - Location of damaged drainage downpipes
2. The surveys are to be recorded in reports that are to be presented to the project Manager for acceptance and confirmation of the revised permanent works.

APPENDIX 5/70AR – DRAINAGE AND SERVICE DUCT REPAIRS

DRAINAGE REPAIRS

1. Cast iron drainage pipes are located on the underside of the concrete deck. Refer to drawing extract provided in the figure below:

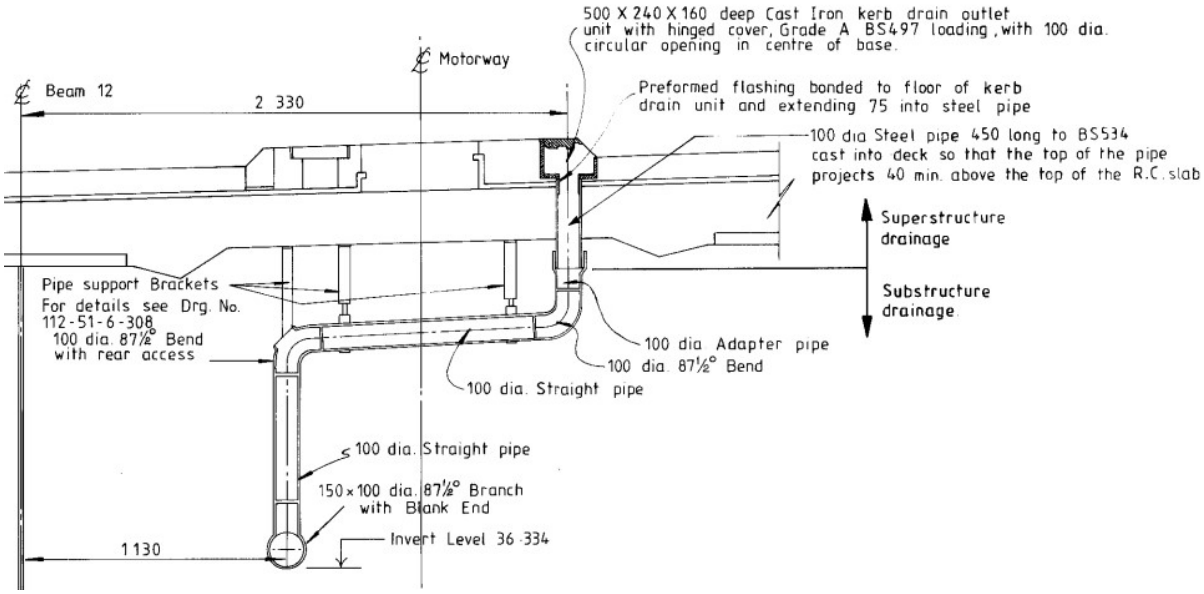


Figure 4: Typical Drainage Details

2. Drainage Defects and Repair Schedule

Location	Record Drawing	Defect Description	Defect Photograph	Repair
Span 1 – Walkway A – Cross Bracing 1	112-51-6-301/AC	Seepage around downpipe.		Cast iron kerb drain to be temporarily removed. Check condition of pipe. Annulus around steel pipe to be filled with resin grout. Pipework to be painted in accordance with Appendix 50/1.

Location	Record Drawing	Defect Description	Defect Photograph	Repair
Span 1 – Walkway D – Cross Bracing 3	112-51-6-307/AC	Full thickness corrosion to 100mm dia 87.5º bend in pipe.		Replace 100mm dia 87.5º bend in pipe. Refer to repair notes below.
Span 4 – Walkway D – Cross Bracing 4	112-51-6-305/AC	Full thickness corrosion to 100mm dia 87.5º bend in pipe.		Replace 100mm dia 87.5º bend in pipe. Refer to repair notes below.

Location	Record Drawing	Defect Description	Defect Photograph	Repair
Span 5 – Walkway D – Cross Bracing 2	112-51-6-304/AC	Full thickness corrosion to 100mm dia 87.5º bend in pipe.		Replace 100mm dia 87.5º bend in pipe. Refer to repair notes below.
Span 5 – Walkway H – Cross Bracing 1	112-51-6-307/AC	Corrosion to 100mm dia 87.5º bend in pipe.		Replace 100mm dia 87.5º bend in pipe. Refer to repair notes below.

Drainage Repair Notes

1.Defect location to be confirmed in pre-works defect survey- refer to Appendix 1/70.

2.All new pipework is to be Cast Iron socketless pipes, connections and couples manufactured in accordance with B.S 416

3.All new pipework is to be painted in accordance with Appendix 19/1.

SERVICE TROUGH REPAIRS

1. Service troughs are located on the verge and central reserve of the bridge. These troughs can be accessed by removing a concrete slab which covers the trough. Typical details of the service trough is provided in the figure below:

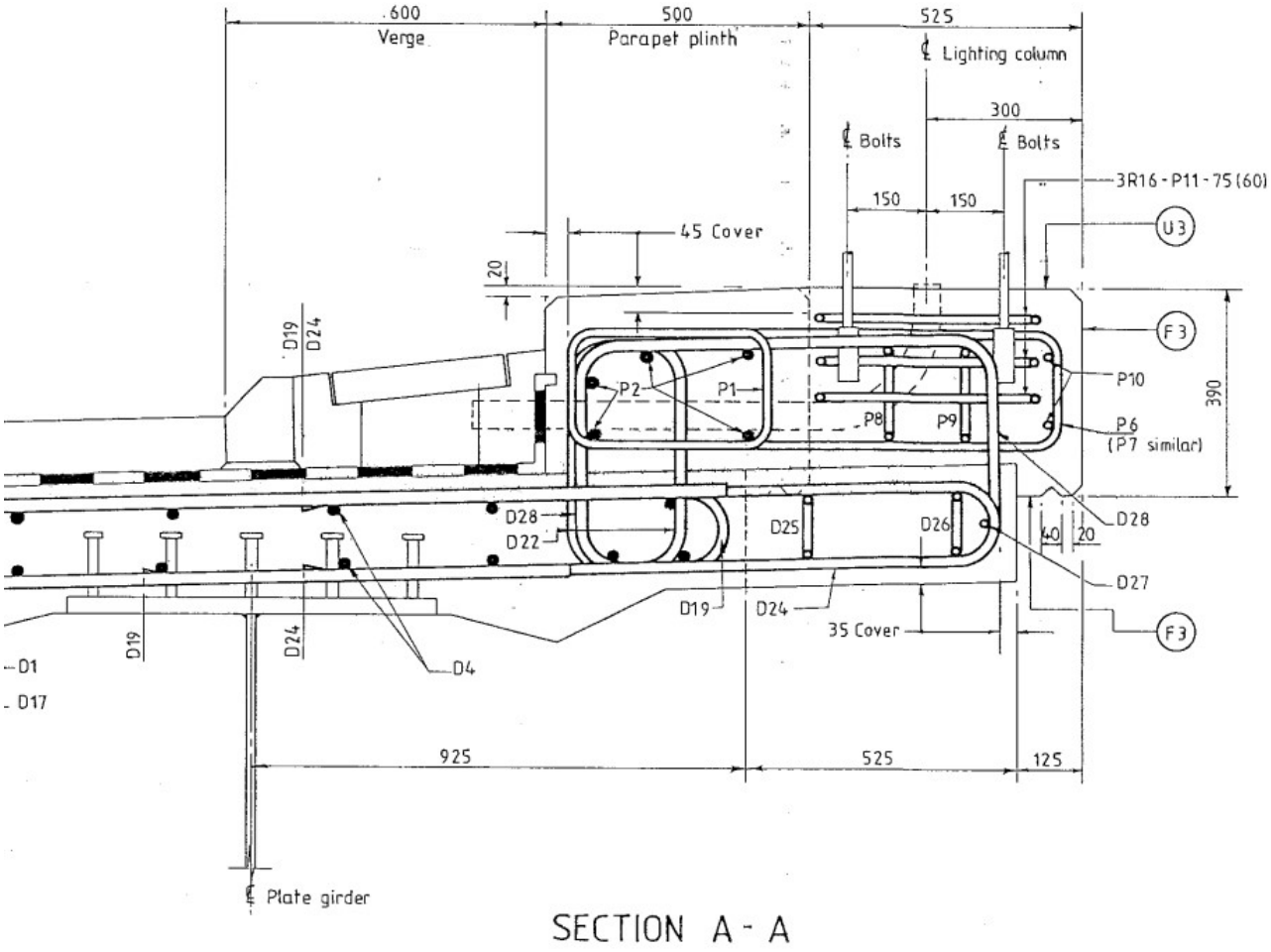
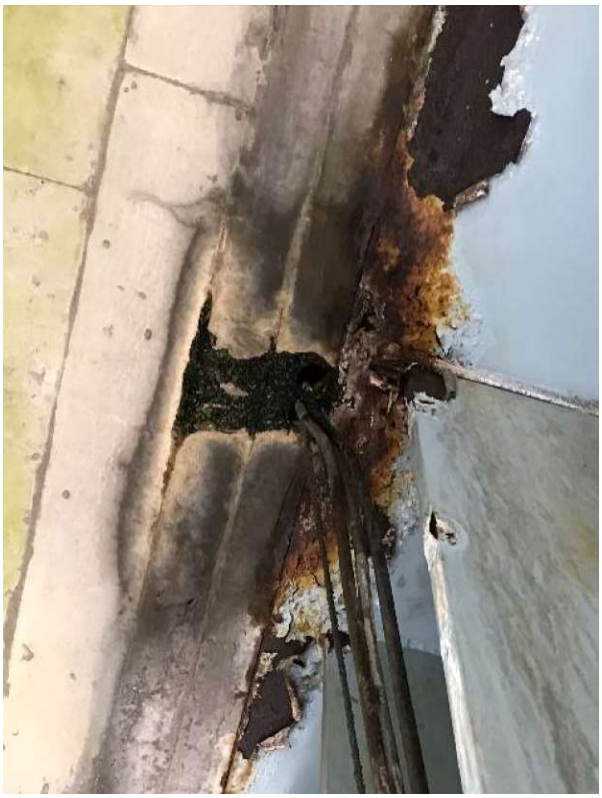


Figure 5: Typical Service Trough Details

2. Service Trough Defects

Location	Defect Description	Defect Photograph
Span 3 Walkway A	Seepage through duct from service trough	
Span 3 – Walkway H	Seepage through duct from service trough	

Defect location to be confirmed in pre-works defect survey- refer to Appendix 1/70.

3. Service Trough Repair (all locations):

1. Remove cover slab above location of seepage.
2. Clean duct.
3. Install Filoform duct sealing system FiloSeal+, or equivalent approved, at trough.
4. Replace cover slab.
5. Undertake maintenance painting to main girders in vicinity of seepage in accordance with Appendix 50/1.

APPENDIX 12/1 – TRAFFIC SIGNS GENERAL

Schedule of Traffic Signs

1. Replace missing weight restriction signage located on Span 3 (Pier 3) Walkway G at Cross Bracing 1 with the sign in the figure below:

Figure 6: Safe Load Notice

2. Sign to be 320mm wide and 525mm high with a 20mm wide red border and be made from 1.2mm thick rigid polypropylene sign with a satin finish.

3. The sign to be fixed to the main girder web by means of adhesive.

APPENDIX 19/1 – Specification for Highway Works Form HA/P1 (Maintenance) Paint System Sheet

Sheet No 1: New Access Walkway Handrails.

1.	CONTRACT TITLE: **River Neath Crossing Underslung Walkway and Miscellaneous Repairs** STRUCTURE NO: **M4 41-42 81** GRID REF: **273304E 193952N**					
2.	DATE OF ISSUE OF DOCUMENTS TO TENDERERS: **TBC**					
3.	ENVIRONMENT AND ACCESSIBILITY: Marine Difficult Access					
4.	REQUIRED DURABILITY OF SYSTEM: NO MAINTENANCE: **Up to 15 YEARS** MINOR MAINTENANCE: **From 15 YEARS** MAJOR MAINTENANCE: **After 25 YEARS**			5.	COLOUR OF FINISH: **To match existing**	
6.	PAINT SYSTEM TO BE APPLIED OVER: **Replacement handrails and fixings** AREA REF: **G** AREA DESCRIPTION: **Handrails and Fixings** PROTECTIVE SYSTEM TYPE (i.e., I, II etc): **IV**					
7.	DETAILS	Metal coat	1st Coat	2nd Coat	3rd Coat	4th Coat
	Registered Description					
	Item No and Colour	Hot dip galvanize	155	110, 112 or 121	112 or 121	167, 168, 169 or 185
	BBA HAPAS Road 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)					
	Max local dft					
	Estimated total volume of paint likely to be used (litres)					
	'A' type testing required? (YES/NO) (See sub-Clause 1912.3)					
	'B' type testing required? (YES/NO) (See sub-Clause 1912.10 (05/05)					
8.	STRIPE COAT(S) DESCRIPTION (Including Item No and colour) Workshop: Site:			9.	PAINT MANUFACURERS'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 for the paint system in Tables 19/2B, 19/3B or 194C as appropriate.			11.	APPROVED BY: DATE	

Sheet No 2: New Drainage Elements.

1.	CONTRACT TITLE: **River Neath Crossing Underslung Walkway and Miscellaneous Repairs** STRUCTURE NO: **M4 41-42 81** GRID REF: **273304E 193952N**					
2.	DATE OF ISSUE OF DOCUMENTS TO TENDERERS: **TBC**					
3.	ENVIRONMENT AND ACCESSIBILITY: Marine Difficult Access					
4.	REQUIRED DURABILITY OF SYSTEM: NO MAINTENANCE: **Up to 15 YEARS** MINOR MAINTENANCE: **From 15 YEARS** MAJOR MAINTENANCE: **After 25 YEARS**				5.	COLOUR OF FINISH: **To match existing**
9.	PAINT SYSTEM TO BE APPLIED OVER: **Replacement Drainage Elements** AREA REF: E AREA DESCRIPTION: **Handrails and Fixings** PROTECTIVE SYSTEM TYPE (i.e., I, II etc): **II**					

10. DETAILS	Metal coat	1st Coat	2nd Coat	3rd Coat	4th Coat
Registered Description					
Item No and Colour		109	112	112	167, 168, 169 or 185
BBA HAPAS Road 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)					
Max local dft					
Estimated total volume of paint likely to be used (litres)					
'A' type testing required? (YES/NO) (See sub-Clause 1912.3)					
'B' type testing required? (YES/NO) (See sub-Clause 1912.10 (05/05)					

11. STRIPE COAT(S) DESCRIPTION (Including Item No and colour) Workshop: Site:	9. PAINT MANUFACURERS'S OFFICIAL STAMP:
12. 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 for the paint system in Tables 19/2B, 19/3B or 194C as appropriate.	13. APPROVED BY: DATE

Appendix 19/3 – Form HA/P2 Paint Data Sheet

(05/05) BBA HAPAS Road and Bridges Certificate Reference and Date:
Manufacturer :
Item No. :

Registered Description :

Brand Name and Reference No. :

Consistency and Method of Application :

Weight per 5 Litres (kg) :

Specific gravity : Colour:

For two-pack paints (05/05):

Base: Activator : Mixed components:

Volume Solids %

For two-pack paints volume solids % for mixed paint (05/05) :

VOC content g/l (mixed) :

Manufacturer's Minimum Dry Film Thickness Range

Recommended lower mdft :

Recommended upper mdft :

Full Application Instructions :

Mix ratio :

Flash Point :

Temperature		**5°C**	**10°C**	**20°C**	**30°C**
Drying Times (hours)	**Surface Dry**				
	Hard Dry				
Overcoating Times (hours)	**Minimum**				
	Maximum				
Pot Life (hours)					

Cleaning Solvent :

State effects on Drying Times of
Temperatures below 20°C :
Manufacturer's Application Restrictions,
e.g. for Temperatures or Humidity :

Manufacturer's General Recommendations :

Appendix 19/4 – Form HA/P3 paint sample despatch list: Sheet 1

Contract Title: **River Neath Bridge Underslung Walkway and Miscellaneous Repairs** .....

Structure Name. **M4 River Neath Crossing**…….. Structure No. **M4 41-42 81…**.....

Client Name ….....

Supervising Firm…….....

Supervising Firm's Representative Name: ..... …..... ……..... Tel No: …….

Address: …… Fax No:……..

Painting Inspection Firm:…… …….....

Samples Dispatched From: ..... ……..... (Note 1) Date Dispatched ..... ……

Inspector's Name: .....……..... Tel No.....…….....

Inspector's Signature: …….....…….....

SAMPLES: (Numbered A1, A2 etc. or B1, B2 etc.) (Note 2)					
Sample No	**Item No.**	**Manufacturer's Reference No**	**Batch No**	**Colour BS 4800 Reference (Note 3)**	**Sp. G. Notes 3 & 4)**

Paint Manufacturer: …….....…….....

Appendix 19/4 – Form HA/P3 paint sample despatch list: Sheet 2

INSPECTOR to complete Form HA/P3 and to forward single copies to each of the following within 24 hours of despatch of samples by the Contractor to Scientifics Ltd:

i. Environmental Scientifics Group Ltd
Coatings Team
Derwent House
Bretby Business Park
Ashby Road
Burton upon Trent
Derbyshire DE15 OXD

ii. Highways Agency
Paint Specialist
NetSErv
Picadilly Gate
Shore Street
Manchester M1 2WD

INSPECTOR to forward Form(s) HA/P1 Paint System Sheet(s) with the first Form HA/P3 to the addresses.

INSPECTOR to select 'A' samples and to ensure that manufacturer's labels on tins comply with the Specification.

INSPECTOR to take and mark each 'B' sample tin with Item No., manufacturer's name and brand reference No., batch No. sample No. and colour (Note 2)

CONTRACTOR to CLIP DOWN LIDS of all tins and to pack, address and dispatch samples. In addition to address, CONTRACTOR to label each case (or tin sent loose): 'HA (state structure name) and Date (date of dispatch as noted above)'.

Note

1. (05/05) State whether from workshop or site (give name and address).
3. Batch samples comprising unopened tins to be marked A1, A2, etc. Control samples in 0.5 litre tins to be marked B1, B2, etc. Samples No. to run consecutively, i.e. A1 and B1 onwards.
4. Colour reference to BS 4800 to be given, as stated on Form HA/P1 (Maintenance) Paint System Sheet,
5. For 'A' samples specific gravity (Sp.G.) to be measured by Inspector from separate tins of the same batch. For 'B' samples Sp.G. to be measured by Inspector when taking samples. Samples will be rejected unless Sp.G. is filled in above by Inspector
6. If Sp.G. differs appreciably from data sheet do not dispatch 'A' or 'B' samples.
7. Do not use this form and send samples if the client is not the Highways Agency, e.g. for a local authority contract.

APPENDIX 23/70AR – EXPANSION JOINT WORKS

1. Repairs to the drainage and water management system shall be undertaken to the expansion joints at Pier 6. Details of the existing drainage and water management system is provided in the figure below:

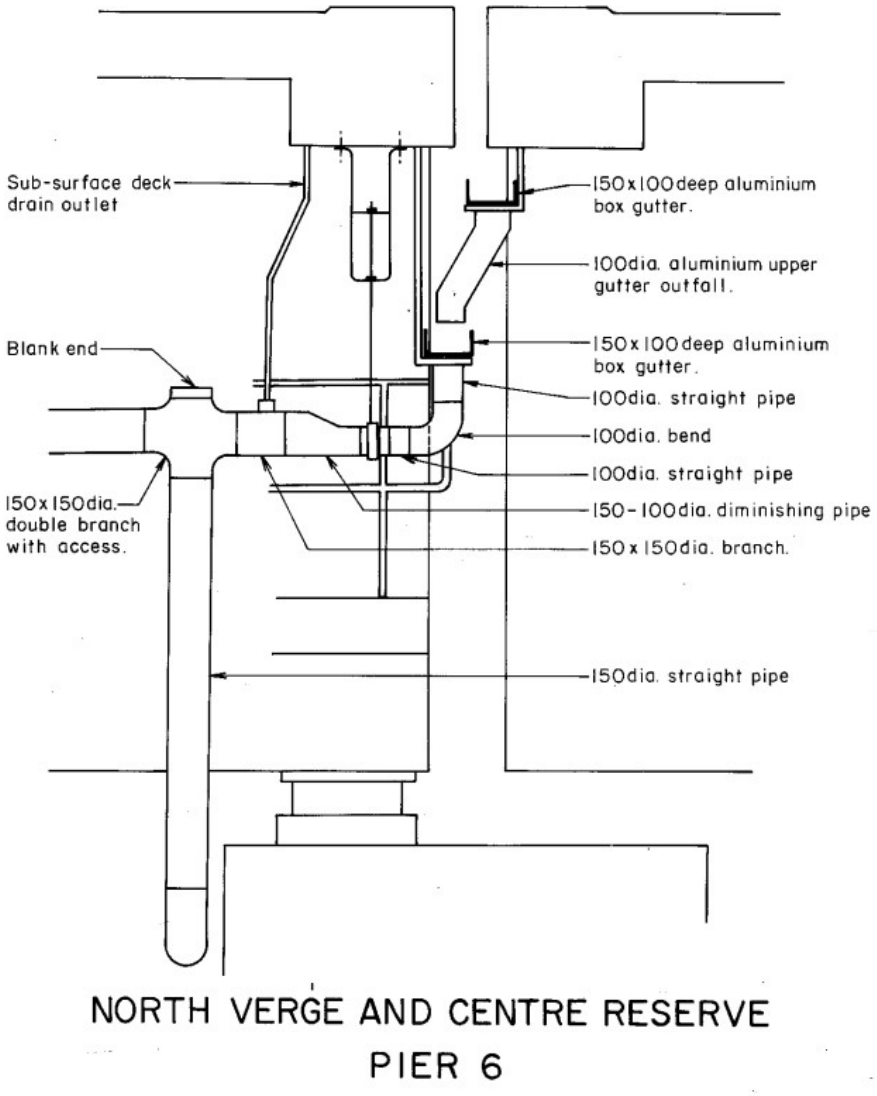


Figure 7: Drainage beneath Expansion Joint at Pier 6

2. Repairs to the water management below the expansion joint will consist of the installation of an aluminium flashing on one side of the expansion joint over its full length. The flashing will be bonded to the concrete substrate by butyl adhesive following surface preparation of the concrete substrate.

3. The approximate location and size of the of the flashing is shown in the figure below:

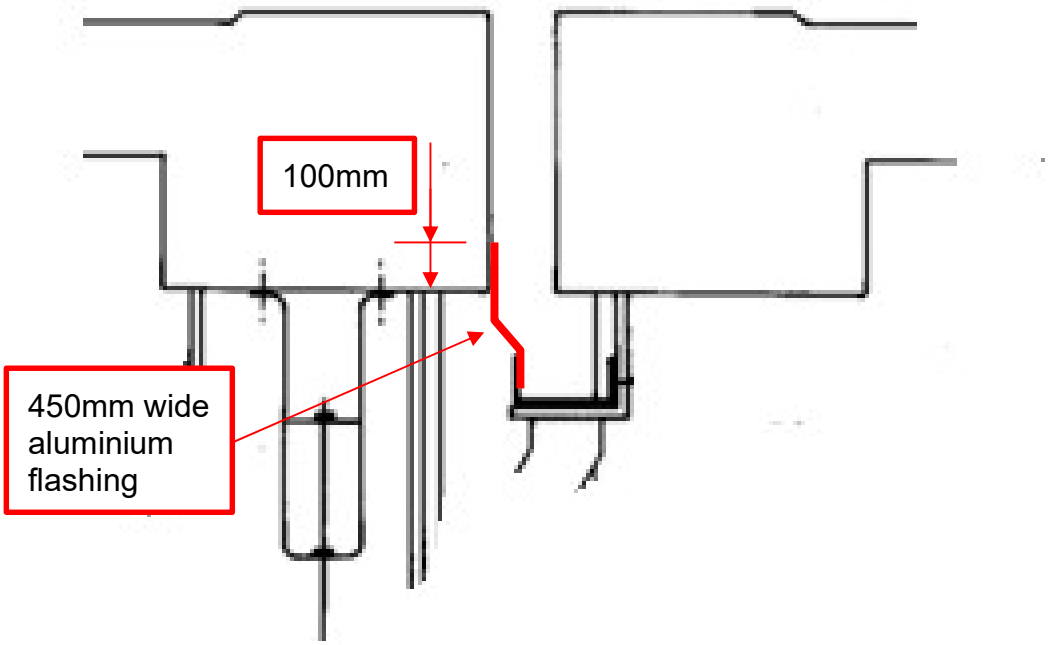


Figure 8: Pier 6 Flashing Details

APPENDIX 25/70AR – HANDRAILING AND WALKWAY WORKS (INCLUDING DESIGN)

Handrailing Requirements

1. Following the pre-works defect survey (Appendix 1/70AR), the existing horizontal handrailing agreed to be removed by the project Manager shall be replaced with new handrailing designed by the Contractor which shall match the overall dimensions of the existing handrailing which is given as 25mm nominal bore diameter on record drawings 112-51-6-636 to 641.
2. The new handrail, fixings and bolts shall be galvanised to BS EN ISO 1461 and painted in accordance with Appendix 19/1 .

Walkway Grating Requirements

3. The existing walkway grating is to be removed and replaced with a new walkway grating designed by the Contractor.
4. The new walkway grating shall be of the same depth as the existing walkway grating given as 20mm on the record drawings.
5. The new walkway grating shall be detailed and installed to accommodate the existing support angles, beams stiffeners and cross bracing as per record drawings 112-51-6-636 to 641.
6. The walkway grating is to be fixed to the supporting steelwork by proprietary clips.
7. Each panel of the walkway grating shall be connected to the adjacent grating by means of bolts.
8. The new walkway grating, fixings and bolts shall be galvanised to BS EN ISO 1461.
9. Each panel of the walkway grating as per the original to accommodate the designed, selected and installed by the Contractor to match the overall depth of the existing walkway (given as 25mm on the record drawings) and be able to accommodate a vertical loading of 5kN/m2 (SLS) and 7.5kN/m^2 (ULS).

Toe Boards Requirements

10. The existing toe boards shall remain insitu and shall be repainted as agreed with Project Manager following the pre-works defect survey (Appendix 1/70AR) in accordance with Appendix 50/1.
11. Following the pre-works defect survey (Appendix 1/70AR), the existing U-bolt connections agreed to be removed by the project Manager shall be replaced. Replacement U-bolts shall be minimum grade 4.6 and the same diameter as existing.
12. New U-bolts to be galvanised to BS EN ISO 1461 and painted in accordance with Appendix 19/1.

Handrailing and Walkway Grating Design Requirements

13. The handrailing shall be designed by the Contractor to be able to accommodate a horizontal loading of 0.74kN/m (SLS) and 1.1kN/m (ULS).

14. The walkway shall be designed to accommodate a vertical loading of 5kN/m^2 (SLS) and 7.5kN/m^2 (ULS).

15. The walkway shall be designed to span transversely between the existing supports with an effective span length of 0.85m.

APPENDIX 50/1 – Specification for Highway Works Form HA/P1 (Maintenance) Paint System Sheet

Sheet No 1A: Existing Access Walkway Handrails.

1.	CONTRACT TITLE:	**River Neath Crossing Underslung Walkway and Miscellaneous Repairs**
	STRUCTURE NO:	**M4 41-42 81**
	GRID REF:	**273304E 193952N**
2.	DATE OF ISSUE OF DOCUMENTS TO TENDERERS:	**TBC**
3.	ENVIRONMENT AND ACCESSIBILITY: **Marine Difficult Access**	
4.	EXISTING PROTECTIVE SYSTEM(S):	

As described in M4 Briton Ferry to Earlswood Maintenance Manual 4 of 5 section 4.4.4.

Access Walkway Handrails:
1st Coat: Item 155, 'T' wash
2nd Coat: Item 172 (171), Zinc Phosphate AR Undercoat
3rd Coat: Item 174 (173), MIO AR Undercoat
4th Coat: Item 174 (173), MIO AR Finish mdft 40µm
Minimum Total dry Film Thickness: 200µm

5.	REQUIRED DURABILITY OF SYSTEM:		6. COLOUR OF FINISH:
	NO MAINTENANCE:	**Up to 15 YEARS**	**To match existing**
	MINOR MAINTENANCE:	**From 15 YEARS**	
	MAJOR MAINTENANCE:	**After 25 YEARS**	

7. BILLED AREA		8. PROTECTIVE SYSTEM TYPE: (ie I(M), II(M), III(M), etc):
REF: AREA DESCRIPTION:	SURFACE PREPARATION METHOD	
A Access Walkway Handrails, toeboards and fixings	Abrading to 5003	**III(M)**

9. PAINT COAT SUMMARY	CONDITION OF SURFACES OF EXISTING SYSTEM AFTER SURFACE PREPARATION							
	Condition: Full depth unsound paint Area Ref: A		Condition: Area Ref A		Condition: Area Ref: A		Condition: Area Ref: A	
COAT & ITEM NO	mdft	B or AS	mdft	B or AS	mdft	B or AS	mdft	B or AS
1st Coat: Item 155		B						
2nd Coat: Item 121	100	B						
3rd Coat: Item 164/ 168/169	40/ 50/50	B						
4th Coat								
MIN TOTAL DFT TO BE OBTAINED	175/250							

Sheet No 1B: Access Walkway Handrails

10. DETAILS	Access walkway handrail			
	1st Coat	2nd Coat	3rd Coat	4th Coat
Registered Description				
Item No and Colour				
BBA HAPAS Road and Bridges Certificate Reference (05/05)				
Brand Name and Manufacturer's Ref No				
Manufacturer's Data Sheet No				
Min dry film thickness (mdft) (μm)				
Max local dft (See sub-Clause 5012.6) (μm)				
Estimated total volume of paint likely to be used (litres)				
'A' type testing required? (YES/NO) (See sub-Clause 5009.3)				
'B' type testing required? (YES/NO) (See sub-Clause 5009.11) (05/050				
11. STRIPE COAT(S) DESCRIPTION (Including Item No and colour):				
12. PATCH COAT(S) DESCRIPTION (Including Item No and colour):				
13. ADDITIONAL INFORMATION (By Paint Manufacturer				
14. PAINT MANUFACTURER'S OFFICIAL STAMP:				
15. Mdft (μm) NOTE: The minimum total dry film thickness (mdft) of the paint system, neglecting primers and sealers under 30 microns, shall be 15% greater (to the nearest 25 microns) than the sum of the mdfts of the individual paint coats.			16. APPROVED BY: DATE:	

APPENDIX 50/1 – Specification for Highway Works Form HA/P1 (Maintenance) Paint System Sheet

Sheet No 2A: Access Walkway Supporting Steelwork

1.	CONTRACT TITLE:	**River Neath Crossing Underslung Walkway and Miscellaneous Repairs**
	STRUCTURE NO:	**M4 41-42 81**
	GRID REF:	**273304E 193952N**
2.	DATE OF ISSUE OF DOCUMENTS TO TENDERERS:	**TBC**
3.	ENVIRONMENT AND ACCESSIBILITY: **Marine Difficult Access**	
4.	EXISTING PROTECTIVE SYSTEM(S):	

As described in M4 Briton Ferry to Earlswood Maintenance Manual 4 of 5 section 4.4.4.

Access Walkway Supporting Angle:
There are two systems proposed, it is not stated which was used.

Option1:
Metal Coasting: Aluminium metal spray.
1st Coat: Item 159, Aluminium Epoxy Sealer (2 pack), B. Application rate: 0.05 to 0.07 L/m^2.
2nd Coat: Item 81, Zinc Phosphate CR/Alkyd Undercoat.
3rd Coat: Item 81, Zinc Phosphate CR/Alkyd Undercoat.
4th Coat: Item 89, MIO CR Undercoat.
5th Coat: Item 97, CR Finish mdft 40 µm.
Minimum total dry film thickness : 250 µm.

Option 2:
Metal Coasting: Aluminium metal spray.
1st Coat: Item 159, Aluminium Epoxy Sealer (2 pack), B. Application rate: 0.05 to 0.07 L/m^2.
2nd Coat: Item 172 (171) Zinc Phosphate AR Undercoat.
3rd Coat: Item 172 (171) Zinc Phosphate AR Undercoat.
4th Coat: Item 174 (173) MIO AR Undercoat.
5th Coat: Item 176 (175) AR Finish mdft 50 µm.
Minimum total dry film thickness : 250 µm.

5.	REQUIRED DURABILITY OF SYSTEM:		6. COLOUR OF FINISH:
	NO MAINTENANCE:	**Up to 15 YEARS**	To match existing
	MINOR MAINTENANCE:	**From 15 YEARS**	
	MAJOR MAINTENANCE:	**After 25 YEARS**	

7. BILLED AREA		8. PROTECTIVE SYSTEM TYPE: (ie I(M), II(M), III(M), etc):
REF: AREA DESCRIPTION:	SURFACE PREPARATION METHOD	
B Access Walkway Supporting steelwork (longitudinal angles, longitudinal beams and horizontal transverse ties)	Abrading to 5003	**II(M)**

Sheet No 2B: Access Walkway Supporting Angles

9. PAINT COAT SUMMARY	CONDITION OF SURFACES OF EXISTING SYSTEM AFTER SURFACE PREPARATION							
	Condition: St3 quality steel Area Ref B		Condition: Sound finishing coat or last undercoat Area Ref B		Condition: Other sound coats Area Ref: B		Condition: Area Ref	
COAT & ITEM NO	mdft	B or AS	mdft	B or AS	mdft	B or AS	mdft	B or AS
1st Coat: Item 160	40	B						
2nd Coat: Item 162	125	B			70	B		
3rd Coat Item 162	125	B			70	B		
4th Coat Item 164/169	40/50	B	40/50	AS	40/50	B		
MIN TOTAL DFT TO BE OBTAINED	275/325		275/325		275/325			

10. DETAILS	Access walkway supporting angle			
	1st Coat	2nd Coat	3rd Coat	4th Coat
Registered Description				
Item No and Colour				
BBA HAPAS Road and Bridges Certificate Reference (05/05)				
Brand Name and Manufacturer's Ref No				
Manufacturer's Data Sheet No				
Min dry film thickness (mdft) (μm)				
Max local dft (See sub-Clause 5012.6) (μm)				
Estimated total volume of paint likely to be used (litres)				
'A' type testing required? (YES/NO) (See sub-Clause 5009.3)				
'B' type testing required? (YES/NO) (See sub-Clause 5009.11) (05/050				

11. STRIPE COAT(S) DESCRIPTION (Including Item No and colour):

12. PATCH COAT(S) DESCRIPTION (Including Item No and colour):

13. ADDITIONAL INFORMATION (By Paint Manufacturer):

14. PAINT MANUFACTURER'S OFFICIAL STAMP:

15. Mdft (μm)

NOTE: The minimum total dry film thickness (mdft) of the paint system, neglecting primers and sealers under 30 microns, shall be 15% greater (to the nearest 25 microns) than the sum of the mdfts of the individual paint coats.

16. APPROVED BY:

DATE:

Appendix 50/3 – Form HA/P2 Paint Data Sheet

(05/05) BBA HAPAS Road and Bridges Certificate Reference and Date:
Manufacturer :
Item No. :

Registered Description :

Brand Name and Reference No. :

Consistency and Method of Application :

Weight per 5 Litres (kg) :

Specific gravity : Colour:

For two-pack paints (05/05):

Base: Activator : Mixed components:

Volume Solids %

For two-pack paints volume solids % for mixed paint (05/05) :

VOC content g/l (mixed) :

Manufacturer's Minimum Dry Film Thickness Range

Recommended lower mdft :

Recommended upper mdft :

Full Application Instructions :

Mix ratio :

Flash Point :

Temperature		**5°C**	**10°C**	**20°C**	**30°C**
Drying Times (hours)	**Surface Dry**				
	Hard Dry				
Overcoating Times (hours)	**Minimum**				
	Maximum				
Pot Life (hours)					

Cleaning Solvent/ thinner :

State effects on Drying Times of Temperatures below 20°C :

Manufacturer's Application Restrictions, e.g. for Temperatures or Humidity :

Manufacturer's General Recommendations :

Appendix 50/4 – Form HA/P3 Paint Sample Despatch List:

Sheets 1 and 2

Form HA/P3 Paint Sample Despatch List: Sheet 1

Contract Title: **River Neath Bridge Underslung Walkway and Miscellaneous Repairs** .....

Structure Name. **M4 River Neath Crossing**…….. Structure No. **M4 41-42 81…**.....

Client Name ….....

Supervising Firm…….....

Supervising Firm's Representative Name: ..... ……. ……..... Tel No: ……

Address: …… Fax No:……..

Painting Inspection Firm: …… …….....

Samples Dispatched From: .....…..... (Note 1) Date Dispatched .....……

Inspector's Name: .....……..... Tel No.....…….....

Inspector's Signature: …….....…….....

SAMPLES: (Numbered A1, A2 etc. or B1, B2 etc.) (Note 2)					
Sample No.	**Item No.**	**Manufacturer's Reference No.**	**Batch No.**	**Colour BS 4800 Reference (Note 3)**	**Sp. G. Notes 3 & 4)**

Paint Manufacturer: …….....…….....

Form HA/P3 Paint Sample Despatch List: Sheet 2

INSPECTOR to complete Form HA/P3 and to forward single copies to each of the following within 24 hours of despatch of samples by the Contractor to Scientifics Ltd:

i. Scientifics Ltd
500 London Road
Derby DE24 8BQ

ii. Highways Agency
Paint Specialist
Safety Standards and Research (SSR)
City Tower
Piccadilly Plaza
Manchester M1 4BE

INSPECTOR to forward Form(s) HA/P1 Paint System Sheet(s) with the first Form HA/P3 to the addresses.

INSPECTOR to select 'A' samples and to ensure that manufacturer's labels on tins comply with the Specification.

INSPECTOR to take and mark each 'B' sample tin with Item No., manufacturer's name and brand reference No., batch No. sample No. and colour (Note 2)

CONTRACTOR to CLIP DOWN LIDS of all tins and to pack, address and dispatch samples. In addition to address, CONTRACTOR to label each case (or tin sent loose): 'HA (state structure name) and Date (date of dispatch as noted above)'.

Note

2. (05/05) State whether from workshop or site (give name and address).
3. Batch samples comprising unopened tins to be marked A1, A2, etc. Control samples in 0.5 litre tins to be marked B1, B2, etc. Samples No. to run consecutively, i.e. A1 and B1 onwards.
4. Colour reference to BS 4800 to be given, as stated on Form HA/P1 (Maintenance) Paint System Sheet.
5. For 'A' samples specific gravity (Sp.G.) to be measured by Inspector from separate tins of the same batch. For 'B' samples Sp.G. to be measured by Inspector when taking samples. Samples will be rejected unless Sp.G. is filled in above by Inspector
6. If Sp.G. differs appreciably from data sheet do not dispatch 'A' or 'B' samples.
7. Do not use this form and send samples if the client is not the Highways Agency, e.g. for a local authority contract.

Appendix 50/5 – General Requirements

1. **Measures to contain, people, plant, materials, dust and debris**
   Refer to Appendix 1/23.

2. **Use of Solvents**
   Solvents shall not be used to remove oil or greases.

South Wales Trunk Road Agent
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