

SCOTLAND TRANSERV SOUTH WEST



PRINCIPAL INSPECTION REPORT

Structure name: KIRKWOOD STREET F/B

Structure number: M8 22-22 F40

Latest Inspection date: 05-July-2017

Prepared by SCOTLAND TRANSERV SOUTH WEST

Name	Qualifications	BICS	Signature	Date
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Inspected by	Redacted	N/A	Redacted	05/07/2017
Checked by	Redacted		Redacted	11/08/2017
Approved by	Redacted		Redacted	14/08/2017

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EXECUTIVE SUMMARY

The footbridge carries pedestrians over the M8 Motorway between Kirkwood Street and Gower Terrace.

The four spans of the bridge, all of which are twin voided comprise one span of insitu post tensioned pre-stressed table top construction, one span of pre-cast, drop-in, post tensioned construction, one insitu reinforced concrete span and one pre-cast, drop-in, reinforced concrete span. These units combine to form the overall deck of the bridge.

Kirkwood Street Footbridge was found to be generally in good condition apart from the half joint in span No3, the soffit of span No4 and intermediate support No3 which are in a fair to poor condition.

Primary Element

Longitudinal and horizontal cracking of reinforced concrete deck slab and soffit >0.6mm in places. Also rust staining which may suggest early signs of delamination. As the deck is post tensioned these cracks require further risk review to BD54/15 standard. A price has been included because it is recommended that an investigation is carried out to determine the level of works required. Areas of concrete adjacent to the half joints on spans 3 and 4 have localised cracking, spalling and exposed corroded reinforcement. The main causes of these defects may be the ingress of water from the deck which is believed to have had road salt used through the half joints where sealant material has failed, coupled with minimal cover to reinforcement.

Half Joints

Cracked / delaminated and spalled concrete on soffit and parapet upstand of half joint at uplink side of span No3 and on downlink side of intermediate support No4. Staining at half joint as a result of seepage through de bonding sealant at parapet upstand joint above.

Parapet Beam

The parapet upstand showing evidence of scaling from frost damage and salt attack exposing aggregate in spans 2 and 3. There are also minor localised spalls where handrail parapet is recessed into the parapet upstand and fascia in span 2 LHS. Also localised spalls on concrete of parapet fascia, upstand of uplink expansion joints at half joints which is providing path for water to saturate joint interface below. Minor random cracking with 40mm void and leaching at LHS on parapet fascia in span 3. Moss growth on parapet upstand and fascia at both sides of span 4.

Abutments

Leaching and dampness on exposed area of bank seat curtain wall at ESP 1. Access to abutments restricted due to lack of clearance between the revetments and deck soffit.

Pier/Column

Expansive corrosion of reinforcement is resulting in rust staining at top of intermediate support No3 on uplink face. Intermediate support No2, 3, and 4 have early thermal cracking and localised spalls. Minor impact damage on ISP 3 at LHS.

Bearings

Minor cracking to top of elastomeric pad on bearing No.2 at ESP 5. Minor spalling of the mortar base around the bearings at ESP 5. Detailed inspection restricted due to access beneath soffit and bearing plinths.

Bearing Shelf

Bearing shelf has a build up debris and rubbish at ESP 1.

Waterproofing

The soffit of the structure shows signs of seepage in span 3. The FTI states that the waterproofing is 43 years old and past its lifespan, should be considered for replacement in any future improvement scheme.

Movement/Expansion Joints

All joints have a build up of debris and grit within the rubber inserts. The polysulphide joint sealant in parapet upstands at the half joints is deteriorating and detaching. This is allowing water and associated contaminants to penetrate the half joints causing localised reinforcement corrosion and concrete to spall. It is recommended that the joints and joint sealant are replaced at these locations.

Painting: Parapet/Handrail

Existing paint system is beyond its useful life span. All paint coats failed. It is therefore recommended that consideration is given for re painting the parapet in the long term.

Handrail / Parapets

Localised areas of minor surface rusting on both parapet rails and post bases in all spans. Vegetation growth encroaching on both parapet rails behind ESP 1.

Superstructure Drainage

Gully grating cover completely blocked preventing water from entering drainage system in span. Deck dripper blocked causing staining on Span 2 soffit adjacent ISP 3 downlink face.

Footway / Footway surfacing

The top layer of the footpath surfacing is cracked with localised areas where the surfacing is missing. The footpath surfacing appears to have been treated with road salts/grit which may affect the condition of the concrete. Footpath surfacing is breaking up exposing localised areas of concrete which appear to have no waterproofing in span 3. Minor vegetation growth at both sides of the footpath in spans 3 and 4.

Revetment

Debris and build of litter making area unsightly on revetment in span 1. There is non offensive graffiti applied on the revetment slabs in span No4.

Embankments

Moderate vegetation growth and build of litter making area unsightly on embankments in span 1 and 4. Minor undermining of parapet beam at uplink RHS of ESP 5.

Approach Rails / Barriers

Safety barrier currently single height OBB protecting slender pier at intermediate support No2 and 4. Due to increase traffic from new M74 on secondary carriageway barrier height / containment should be upgraded.

Work Required:

- Investigation
- Waterproofing Replacement
- Joints replace and repair
- Painting parapets
- Footway surfacing
- Concrete repairs
- Masonry repairs
- Safety Fencing - Approach Barriers

Cyclic Maintenance:

- Expansion joints
- Bearings and bearing shelves
- Drainage cleaning
- Vegetation removal

1. STRUCTURE IDENTIFICATION AND LOCATION PLANS

1.1 Structure Identification

Principal Inspection Report

Structure No.	:	M8 22-22 F40
Structure	:	KIRKWOOD STREET F/B
Grid Reference	:	256167,664183
Year of Construction	:	1974
Date of Inspection	:	Span No: 1 05/07/2017
		Span No: 2 05/07/2017
		Span No: 3 05/07/2017
		Span No: 4 05/07/2017

This report is carried out in accordance with several documents, including: BD 63/07, the Inspection Manual for Highway Structures, and the Transport Scotland Inspection Manual.

1.2 Location Plan



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2. CHECKLISTS

2.1 Principal Inspection Report Checklist

Structure Reference No: M8 22-22 F40

Structure Name: KIRKWOOD STREET F/B

Principal Inspection Date:

Span No: 1	05/07/2017
Span No: 2	05/07/2017
Span No: 3	05/07/2017
Span No: 4	05/07/2017

The above report has been checked for compliance with the following:-
[NOTE: To confirm compliance, double click box to insert tick]

- | | | |
|-----|---|-----|
| 1. | Date of site visit entered into SMS | ✓ |
| 2. | Report dated and signed | ✓ |
| 3. | Colour photograph inserted on front page | ✓ |
| 4. | Appendices GA ₁ /PH*/DI*/FT ₁ / WR*/DR*/HM* included
1 = Mandatory
* = Delete as required - refer to Scottish Ministers Requirements | ✓ |
| 5. | All fields in Full Text Inventory verified as correct? | ✓ |
| 6. | Updating of Joblist checked and verified? | ✓ |
| 7. | Uplink/ Downlink shown on GA | ✓ |
| 8. | Photographs located on GA by arrows and reference | |
| 9. | Measured headroom shown on GA
(Mandatory for all overbridges and for underbridges over roads) | ✓ |
| 10. | Photographs of all defects with a Priority Ranking >2 included | ✓ |
| 11. | Works estimates included if an Prioritisation Ranking >2.
Where applicable, rates from the Schedule of Rates and Prices given in the Term Contract have been used in preparing the estimate. | ✓ |
| 12. | Structural Review & Assessment undertaken | N/A |

3. DESCRIPTION OF STRUCTURE

3.1 General description

Structure Name: KIRKWOOD STREET F/B

Number of Spans: 4

Structure Type: FOOTBRIDGE

Route: M8

Confined Space Working No

Obstacle(s) Crossed: Span 1: GROUND (APPROACH OR SIDELONG)

Span 2: TRUNK ROAD

Span 3: TRUNK ROAD

Span 4: GROUND (APPROACH OR SIDELONG)

Ordinance Survey Grid Reference: 256167,664183

3.2 Deck description

Span Number: 1

Span Description: RC, VOIDED

Span Width: 3.5m

Span Length 13.60m

Primary Deck Element = 12 Slab Voided

Primary Deck Element Material = A Reinforced Concrete

Secondary Deck Element = 20 No Secondary Deck Element - No Transverse Beams

Secondary Deck Element Material = P No Secondary Element

Span Number: 2

Span Description: POST TENSIONED, VOIDED

Span Width: 3.5m

Span Length 28.00m

Primary Deck Element = 12 Slab Voided

Primary Deck Element Material = C Post -tensioned Concrete

Secondary Deck Element = 20 No Secondary Deck Element - No Transverse Beams

Secondary Deck Element Material = P No Secondary Element

Span Number: 3

Span Description: POST TENSIONED, VOIDED

Span Width: 3.5m

Span Length 30.88m

Primary Deck Element = 12 Slab Voided

Primary Deck Element Material = C Post -tensioned Concrete

Secondary Deck Element = 20 No Secondary Deck Element - No Transverse Beams

Secondary Deck Element Material = P No Secondary Element

Span Number: 4

Span Description: RC, VOIDED

Span Width: 3.5m

Span Length 16.14m

Primary Deck Element = 12 Slab Voided

Primary Deck Element Material = A Reinforced Concrete

Secondary Deck Element = 20 No Secondary Deck Element - No Transverse Beams

Secondary Deck Element Material = P No Secondary Element

3.3 End Supports

Support Number 01E

Support Foundation Type = PILES – END BEARING

Support Foundation Material = BORED CAST IN PLACE REINFORCED CONCRETE

Support Structural Form = BANKSEAT ABUTMENT

Support Construction = REINFORCED CONCRETE

Support Number 05E

Support Foundation Type = PILES – END BEARING

Support Foundation Material = BORED CAST IN PLACE REINFORCED CONCRETE

Support Structural Form = BANKSEAT ABUTMENT

Support Construction = REINFORCED CONCRETE

3.4 Intermediate Supports

Support Number 02I

Support Foundation Type = SPREAD FOOTING ON ROCK

Support Foundation Material = REINFORCED CONCRETE

Support Structural Form = COLUMNS WITH PLINTH

Support Construction = REINFORCED CONCRETE

Support Number 03I

Support Foundation Type = SPREAD FOOTING ON ROCK

Support Foundation Material = REINFORCED CONCRETE

Support Structural Form = COLUMNS WITH PLINTH

Support Construction = REINFORCED CONCRETE

Support Number 04I

Support Foundation Type = SPREAD FOOTING ON ROCK

Support Foundation Material = REINFORCED CONCRETE

Support Structural Form = COLUMNS WITH PLINTH

Support Construction = REINFORCED CONCRETE

4. MAINTENANCE HISTORY

4.1 Details of Maintenance Works undertaken since last principal inspection

From SMS

Span No:

Work Required:

Defect:

Comments:

Date of Order:

Cost:

Completed Date:

From TRBDB

Year Works Started:

Maintenance Work Category:

Works Description:

Approximate Cost:

Total Cost:

Contractor:

Designer:

5. DESCRIPTION OF INSPECTIONS

5.1 Previous Inspections

Principal Inspection:

22-June-2011
09-March-2005
08-May-1999

General Inspection:

12-Aug-2015

Special Inspection details:

5.2 Name of Inspecting Engineer and Assistant

Inspecting Engineer: Redacted

Assistant: Redacted

5.3 Date of this inspection

05-July-2017

5.4 Weather conditions

Weather Conditions at time of inspection: MILD / DRY

Weather Conditions 2 days before inspection: MILD / DRY

5.5 Description of how inspection was undertaken

Span: **1**

Access Equipment Used: ACCESS VEHICLE
 Traffic Management Used: First = MULTIPLE LANE CLOSURES

Span: **2**

Access Equipment Used: First = ACCESS VEHICLE
 Traffic Management Used: First = MULTIPLE LANE CLOSURES

Span: **3**

Access Equipment Used: First = ACCESS VEHICLE
 Traffic Management Used: First = MULTIPLE LANE CLOSURES

Span: **4**

Access Equipment Used: First = ACCESS VEHICLE
 Traffic Management Used: First = MULTIPLE LANE CLOSURES

5.6 List of areas not inspected

<i>Span Number</i>	<i>Element</i>
1	Foundations
2	Foundations
3	Foundations
4	Foundations

6. RESULTS OF INSPECTION

6.1 Summary

*Severity descriptions are in accordance with the Inspection Manual for Highway Structures. Full descriptions are available in Table G.8 and 1.1.3 of Vol.2 Part B.

Span No	Element	Severity*	Extent	Maint. Priority Ranking (1-4)	Multi Defect
1	Primary Deck Element (Table G4)	3 Moderate	B Slight <5%	2	False
1	Half Joints	2 Minor	B Slight <5%	2	False
1	Parapet Beam Or Cantilever	1 As New / Insignificant	A No Significant Defect	?	False
1	Foundations	6 NOT APPLICABLE	F NOT APPLICABLE	?	False
1	Abutments (Incl. Arch Springing)	2 Minor	C Moderate 5 - 20%	2	False
1	Pier/Column	2 Minor	B Slight <5%	2	False
1	Bearings	1 As New / Insignificant	A No Significant Defect	1	False
1	Bearing Plinth/Shelf	3 Moderate	C Moderate 5 - 20%	3	False
1	Bearing Plinth/Shelf	1 As New / Insignificant	A No Significant Defect	1	True
1	Waterproofing	1 As New / Insignificant	A No Significant Defect	2	False
1	Movement/Expansion Joints	3 Moderate	E Extensive >50%	3	False
1	Movement/Expansion Joints	3 Moderate	C Moderate 5 - 20%	3	True
1	Movement/Expansion Joints	3 Moderate	C Moderate 5 - 20%	2	True
1	Painting: Parapets/Safety Fences	5 Non-functional	D Extensive 20 - 50%	3	False
1	Handrail/Parapets/Safety Fences	3 Moderate	E Extensive >50%	2	True
1	Handrail/Parapets/Safety Fences	2 Minor	C Moderate 5 - 20%	2	False
1	Footway/Verge/Footbridge Surfacing	3 Moderate	C Moderate 5 - 20%	3	False
1	Footway/Verge/Footbridge Surfacing	2 Minor	C Moderate 5 - 20%	2	True
1	Revetment/Batter Paving	3 Moderate	D Extensive 20 - 50%	3	False
1	Embankments	3 Moderate	D Extensive 20 - 50%	2	False
2	Primary Deck Element (Table G4)	3 Moderate	B Slight <5%	3	False
2	Primary Deck Element (Table G4)	2 Minor	B Slight <5%	2	True
2	Parapet Beam Or Cantilever	3 Moderate	B Slight <5%	3	False
2	Parapet Beam Or Cantilever	1 As New / Insignificant	A No Significant Defect	1	True

2	Foundations	6 NOT APPLICABLE	F NOT APPLICABLE	?	False
2	Pier/Column	3 Moderate	C Moderate 5 - 20%	3	False
2	Pier/Column	2 Minor	B Slight <5%	2	True
2	Pier/Column	2 Minor	B Slight <5%	2	True
2	Superstructure Drainage	5 Non-functional	E Extensive >50%	3	False
2	Superstructure Drainage	2 Minor	B Slight <5%	2	True
2	Waterproofing	1 As New / Insignificant	A No Significant Defect	2	False
2	Painting: Parapets/Safety Fences	5 Non-functional	D Extensive 20 - 50%	3	False
2	Handrail/Parapets/Safety Fences	2 Minor	C Moderate 5 - 20%	2	False
2	Footway/Verge/Footbridge Surfacing	2 Minor	C Moderate 5 - 20%	2	False
2	Approach Rails/Barriers/Walls	3 Moderate	E Extensive >50%	3	False
3	Primary Deck Element (Table G4)	3 Moderate	C Moderate 5 - 20%	3	False
3	Primary Deck Element (Table G4)	3 Moderate	C Moderate 5 - 20%	3	True
3	Half Joints	4 Severe	D Extensive 20 - 50%	4	False
3	Parapet Beam Or Cantilever	4 Severe	C Moderate 5 - 20%	4	False
3	Parapet Beam Or Cantilever	2 Minor	B Slight <5%	2	True
3	Foundations	6 NOT APPLICABLE	F NOT APPLICABLE	?	False
3	Pier/Column	2 Minor	B Slight <5%	2	False
3	Waterproofing	3 Moderate	B Slight <5%	3	False
3	Movement/Expansion Joints	3 Moderate	E Extensive >50%	3	False
3	Movement/Expansion Joints	3 Moderate	C Moderate 5 - 20%	2	True
3	Movement/Expansion Joints	2 Minor	C Moderate 5 - 20%	3	True
3	Painting: Parapets/Safety Fences	5 Non-functional	D Extensive 20 - 50%	3	False
3	Handrail/Parapets/Safety Fences	2 Minor	C Moderate 5 - 20%	2	False
3	Footway/Verge/Footbridge Surfacing	3 Moderate	C Moderate 5 - 20%	3	False
3	Footway/Verge/Footbridge Surfacing	2 Minor	C Moderate 5 - 20%	2	True
3	Approach Rails/Barriers/Walls	3 Moderate	E Extensive >50%	3	False
4	Primary Deck Element (Table G4)	3 Moderate	C Moderate 5 - 20%	3	True
4	Primary Deck Element (Table G4)	3 Moderate	C Moderate 5 - 20%	3	True

4	Primary Deck Element (Table G4)	3 Moderate	C Moderate 5 - 20%	2	False
4	Parapet Beam Or Cantilever	2 Minor	D Extensive 20 - 50%	2	False
4	Parapet Beam Or Cantilever	1 As New / Insignificant	A No Significant Defect	1	True
4	Foundations	6 NOT APPLICABLE	F NOT APPLICABLE	?	False
4	Abutments (Incl. Arch Springing)	1 As New / Insignificant	A No Significant Defect	1	False
4	Bearings	2 Minor	B Slight <5%	2	False
4	Bearing Plinth/Shelf	2 Minor	C Moderate 5 - 20%	2	False
4	Superstructure Drainage	1 As New / Insignificant	A No Significant Defect	1	False
4	Waterproofing	1 As New / Insignificant	A No Significant Defect	2	False
4	Movement/Expansion Joints	4 Severe	D Extensive 20 - 50%	3	True
4	Movement/Expansion Joints	3 Moderate	E Extensive >50%	3	False
4	Painting: Parapets/Safety Fences	5 Non-functional	D Extensive 20 - 50%	3	False
4	Handrail/Parapets/Safety Fences	3 Moderate	B Slight <5%	2	True
4	Handrail/Parapets/Safety Fences	2 Minor	C Moderate 5 - 20%	2	False
4	Footway/Verge/Footbridge Surfacing	3 Moderate	C Moderate 5 - 20%	3	False
4	Footway/Verge/Footbridge Surfacing	2 Minor	C Moderate 5 - 20%	2	True
4	Footway/Verge/Footbridge Surfacing	2 Minor	C Moderate 5 - 20%	2	True
4	Revetment/Batter Paving	1 As New / Insignificant	A No Significant Defect	1	False
4	Embankments	2 Minor	D Extensive 20 - 50%	2	False
4	Embankments	2 Minor	B Slight <5%	2	True

Management Action: Span 1 : 2 - Maintenance Works should proceed next Fin Year
 Management Action: Span 2 : 3 - Special Investigation Required next Fin Year
 Management Action: Span 3 : 2 - Maintenance Works should proceed next Fin Year
 Management Action: Span 4 : 2 - Maintenance Works should proceed next Fin Year

Maintenance Priority Ranking [1-4]

- 1 - INSIGNIFICANT Nothing to worry about. Leave for further examination at next PI. Not likely to deteriorate significantly within 6 years.
- 2 - MINOR Nothing to worry about, but likely to deteriorate significantly within 6 years.
- 3 - UNACCEPTABLE Should not be left for 6 years until next PI. Rapid deterioration and escalation of repair cost inevitable if left unrepaired. Could become severe to affect integrity of structure.
- 4 - SEVERE: ACTION Currently affecting the integrity of the structure. Essential to repair at an early date. NEEDED Could become hazardous if left. Cost of repair/damage to structure escalating rapidly.

Management Actions [1-8]

1. No maintenance works required; no defective main elements with maintenance prioritisation ranking >2. General Inspections to monitor.
2. Maintenance works should proceed next financial year; defective main elements having maintenance prioritisation ranking >2. General Inspections to monitor if repairs delayed. (Estimate required)
3. Special Investigation required next financial year to determine the nature and extent of works required. (Estimate required)
4. Await programmed strengthening or other upgrading and carry out any structural maintenance concurrently with these works.
5. Where an improvement scheme with detrunking is imminent (estimated to start within 6 years) - postpone all works until opening of the new trunk road to minimise traffic disruption. General inspections to monitor.
6. Postpone maintenance works so that they can be phased with other future works to be carried out on the route. Transport Scotland Bridges Section consulted. General Inspections to monitor until works commence. (Estimate required)
7. Demolition as part of trunk road scheme planned - structure can safely be neglected. General Inspections to monitor until demolition takes place.
8. Beyond economical repair - Replace. (Estimate required)

6.2 Detailed Defect Descriptions

Span Number: 1

Element: Primary Deck Element (Table G4) (1)

Defect Type: 2 6 3 Cracks and crazing in areas of high flexure or cracks approx 1mm and easily visible

Multiple Defect?: False

Severity: 3 Moderate

Extent: B Slight <5%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Photograph No.1& 2 - (Typical) Longitudinal and horizontal cracking of reinforced concrete deck slab and soffit >0.3mm in places. Also rust staining which may suggest early signs of delamination.

Span Number: 1

Element: Half Joints (4)

Defect Type: 2 8 2 Early signs of delamination e.g. cracks with rust staining

Multiple Defect?: False

Severity: 2 Minor

Extent: B Slight <5%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Photograph No.3 - Staining at half joint as a result of seepage through de bonding sealant at parapet upstand joint above.

Span Number: 1

Element: Parapet Beam Or Cantilever (6)

Defect Type: 2 6 1 Hairline cracks, difficult to detect visually

Multiple Defect?: False

Severity: 1 As New / Insignificant

Extent: A No Significant Defect

Location: Not entered

Maintenance Priority Ranking: 0

Work Required: ?

Estimated Cost: Not Completed

Comments: Hairline cracks difficult to detect on parapet upstand and fascias.

Span Number: 1

Element: Foundations (8)

Defect Type: 0 ? .0 Item present but not inspected

Multiple Defect?: False

Severity: 6 NOT APPLICABLE

Extent: F NOT APPLICABLE

Location: Not entered

Maintenance Priority Ranking: 0

Work Required: ?

Estimated Cost: Not Completed

Comments: Foundations buried no evidence at ground level to suggest problem with foundations.

Span Number: 1

Element: Abutments (Incl. Arch Springing) (9)

Defect Type: 99 ? .2 WDM Generic Defect Severity 2

Multiple Defect?: False

Severity: 2 Minor

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Photograph No.4 - Leaching and dampness on exposed area of bank seat curtain wall.
 Access to inspect area difficult due to access beneath soffit.

Span Number: 1

Element: Pier/Column (11)

Defect Type: 2 5 2 Minor localised spalls possibly exposing shear links

Multiple Defect?: False

Severity: 2 Minor

Extent: B Slight <5%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Photograph No.5 - Minor localised spalling exposing localised areas of reinforcement.

Span Number: 1

Element: Bearings (13)

Defect Type: 12 1 1 Negligible Rusting, Minor Weathering

Multiple Defect?: False

Severity: 1 As New / Insignificant

Extent: A No Significant Defect

Location: Not entered

Maintenance Priority Ranking: 1

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Elastomeric bearings at end support No1 appear in good condition with only minor weathering.
 Detailed inspection restricted due to access beneath soffit and bearing plinths.

Span Number: 1

Element: Bearing Plinth/Shelf (14)

Defect Type: 99 ? .3 WDM Generic Defect Severity 3

Multiple Defect?: False

Severity: 3 Moderate

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Cyclic Maint - Bearings & bearing shelves

Estimated Cost: £ 1

Comments: See Photo No.4 - Bearing shelf has a build up debris and rubbish.

Span Number: 1

Element: Bearing Plinth/Shelf (14)

Defect Type: 2 8 1 No signs of delamination

Multiple Defect?: True

Severity: 1 As New / Insignificant

Extent: A No Significant Defect

Location: Not entered

Maintenance Priority Ranking: 1

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: See Photo No.4 - Bearing plinths appear to be in a good condition with no evidence of delamination. Access to inspect area restricted due to height between soffit and bearing ledge and build up of debris.

Span Number: 1

Element: Waterproofing (17)

Defect Type: 14 56 1 No Visible Sign Of Seepage

Multiple Defect?: False

Severity: 1 As New / Insignificant

Extent: A No Significant Defect

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: Waterproofing - Replacement

Estimated Cost: £ 12,000

Comments: The soffit of the structure shows no signs of seepage. The FTI states that the waterproofing is 43 years old and past its lifespan, should be considered for replacement in any future improvement scheme.

Span Number: 1

Element: Movement/Expansion Joints (18)

Defect Type: 99 ? .3 WDM Generic Defect Severity 3

Multiple Defect?: False

Severity: 3 Moderate

Extent: E Extensive >50%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Cyclic Maint - Expansion joints

Estimated Cost: £ 1

Comments: Photograph Nos.6 & 7 - Expansion joint rubber inserts at end support No1 and Half joint in span No1 blocked with debris.

Span Number: 1

Element: Movement/Expansion Joints (18)

Defect Type: 10 44 3 Sealant breached, strip sealant breached

Multiple Defect?: True

Severity: 3 Moderate

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: Joints - Repair

Estimated Cost: £ 1

Comments: Photograph No.8 - (Typical) Polysulphide sealant de bonded at both sides of ESP 1 and half joint in span 1.

Span Number: 1

Element: Movement/Expansion Joints (18)

Defect Type: 10 57 3 Moderate leakage through joint

Multiple Defect?: True

Severity: 3 Moderate

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Joints - Replace

Estimated Cost: £ 2,625

Comments: See Photo Nos.6,7 & 8 - Moderate leakage through expansion joint rubber insert at end support No1 and through polysulphide joint in the parapet upstands at the half joint.

Span Number: 1

Element: Painting: Parapets/Safety Fences (21)

Defect Type: 4 17 5 All Coats Failed

Multiple Defect?: False

Severity: 5 Non-functional

Extent: D Extensive 20 - 50%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: P Paint

Estimated Cost: £ 5,180

Comments: Photograph Nos.9 & 10 - (Typical) Existing paint system is beyond its useful life span. All paint coats failed. It is therefore recommended that consideration is given for re painting the parapet in the long term.

Span Number: 1

Element: Handrail/Parapets/Safety Fences (23)

Defect Type: 1 1 2 Minor surface rusting

Multiple Defect?: False

Severity: 2 Minor

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Photograph No.11 - (Typical) Localised areas of minor surface rusting on both parapet rails and post bases in all spans.

Span Number: 1

Element: Handrail/Parapets/Safety Fences (23)

Defect Type: 5 18 3 Vegetation Growth On Or Near Bridge Causing Structural Damage And/Or Deformation E.G. Roots And Branches Of Nearby Trees, Small Tree/Plants Growing On Structure

Multiple Defect?: True

Severity: 3 Moderate

Extent: E Extensive >50%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: Cyclic Maintenance - Vegetation

Estimated Cost: £ 1

Comments: Photograph No.66 - Vegetation growth encroaching on both parapet rails behind ESP 1.

Span Number: 1

Element: Footway/Verge/Footbridge Surfacing (25)

Defect Type: 99 ? .3 WDM Generic Defect Severity 3

Multiple Defect?: False

Severity: 3 Moderate

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Other - Surfacing

Estimated Cost: £ 1,500

Comments: Photograph No.12 - (Typical) Footpath surfacing appears to have been treated with road salts / grit which may affect the condition of the concrete. Surfacing is ponding due to existing levels and lack of drainage outlets.

Span Number: 1

Element: Footway/Verge/Footbridge Surfacing (25)

Defect Type: 9 35 2 Cracks In Top Layer

Multiple Defect?: True

Severity: 2 Minor

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Photograph No13 - (Typical) Cracks are evident in top layer of the surfacing.

Span Number: 1

Element: Revetment/Batter Paving (30)

Defect Type: 99 ? .3 WDM Generic Defect Severity 3

Multiple Defect?: False

Severity: 3 Moderate

Extent: D Extensive 20 - 50%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Cyclic Maintenance - Vegetation

Estimated Cost: £ 1

Comments: Photograph No.14 - Debris and build of litter making area unsightly on revetment in span 1.

Span Number: 1

Element: Embankments (33)

Defect Type: 5 19 3 Significant Depth/Density Of Vegetation, Obscuring Inspection E.G. Ivy

Multiple Defect?: False

Severity: 3 Moderate

Extent: D Extensive 20 - 50%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: Cyclic Maintenance - Vegetation

Estimated Cost: £ 1

Comments: Photograph No.15 - Moderate vegetation growth on embankment in span 1.

Span Number: 2

Element: Primary Deck Element (Table G4) (1)

Defect Type: 2 6 3 Cracks and crazing in areas of high flexure or cracks approx 1mm and easily visible

Multiple Defect?: False

Severity: 3 Moderate

Extent: B Slight <5%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Investigation

Estimated Cost: £ 2,000

Comments: Photograph No.1& 2 - (Typical) Longitudinal and horizontal cracking of reinforced concrete deck slab and soffit >0.3mm in places. As the deck is post tensioned these cracks require further risk review to BD54/15 standard.

Span Number: 2

Element: Primary Deck Element (Table G4) (1)

Defect Type: 2 5 2 Minor localised spalls possibly exposing shear links

Multiple Defect?: True

Severity: 2 Minor

Extent: B Slight <5%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Photograph No.18 - Minor spall exposing reinforcement on soffit of deck slab at LHS.

Span Number: 2

Element: Parapet Beam Or Cantilever (6)

Defect Type: 2 5 3 Major localised spalls possibly exposing shear links and/or main bars with general corrosion

Multiple Defect?: False

Severity: 3 Moderate

Extent: B Slight <5%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Concrete - Repairs

Estimated Cost: £ 500

Comments: Photograph Nos.16 & 17 - Moderate localised spall where handrail parapet is recessed into concrete of parapet upstand. At LHS above lane 2 of M8 westbound.

Span Number: 2

Element: Parapet Beam Or Cantilever (6)

Defect Type: 2 6 1 Hairline cracks, difficult to detect visually

Multiple Defect?: True

Severity: 1 As New / Insignificant

Extent: A No Significant Defect

Location: Not entered

Maintenance Priority Ranking: 1

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Early thermal cracking on parapet upstand and fascias.

Span Number: 2

Element: Foundations (8)

Defect Type: 0 ? .0 Item present but not inspected

Multiple Defect?: False

Severity: 6 NOT APPLICABLE

Extent: F NOT APPLICABLE

Location: Not entered

Maintenance Priority Ranking: 0

Work Required: ?

Estimated Cost: Not Completed

Comments: Foundations buried no evidence at ground level to suggest problem with foundations.

Span Number: 2

Element: Pier/Column (11)

Defect Type: 2 5 3 Major localised spalls possibly exposing shear links and/or main bars with general corrosion

Multiple Defect?: False

Severity: 3 Moderate

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Concrete - Repairs

Estimated Cost: £ 1,000

Comments: Photograph Nos.19 & 20 - Expansive corrosion of embedded reinforcement is resulting in rust staining at top of intermediate support No3 on uplink face.

Span Number: 2

Element: Pier/Column (11)

Defect Type: 2 6 2 Cracks and crazing in areas of low flexural behaviour or cracks less than 0.3mm

Multiple Defect?: True

Severity: 2 Minor

Extent: B Slight <5%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Photograph No.24 - Random cracking at top of ISP 3 on downlink face. Repair at same time

as uplink face.

Span Number: 2

Element: Pier/Column (11)

Defect Type: 13 54 2 Slight Surface Scoring, Minor Displacement Of Element E.G. Marking And Chipping Of Beam Faces, Several Bricks Across Arch Barrel Width, Slight Impact Deformation Of Steelwork

Multiple Defect?: True

Severity: 2 Minor

Extent: B Slight <5%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Photograph No.21 - Minor impact damage on ISP 3 at LHS.

Span Number: 2

Element: Superstructure Drainage (15)

Defect Type: 8 28 5 Totally Blocked/Non-functional/Broken

Multiple Defect?: False

Severity: 5 Non-functional

Extent: E Extensive >50%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Cyclic Maint - Drainage

Estimated Cost: £ 1

Comments: Photograph No.22 - Gully grating cover completely blocked preventing water from entering drainage system.

Span Number: 2

Element: Superstructure Drainage (15)

Defect Type: 8 29 2 Causing Minor Staining

Multiple Defect?: True

Severity: 2 Minor

Extent: B Slight <5%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: Cyclic Maint - Drainage

Estimated Cost: £ 1

Comments: Photograph No.23 - Deck dripper blocked causing staining on Span 2 soffit adjacent ISP 3 downlink face.

Span Number: 2

Element: Waterproofing (17)

Defect Type: 14 56 1 No Visible Sign Of Seepage

Multiple Defect?: False

Severity: 1 As New / Insignificant

Extent: A No Significant Defect

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: Waterproofing - Replacement

Estimated Cost: £ 24,500

Comments: The soffit of the structure shows no signs of seepage. The FTI states that the waterproofing is 43 years old and past its lifespan, should be considered for replacement in any future improvement scheme.

Span Number: 2

Element: Painting: Parapets/Safety Fences (21)

Defect Type: 4 17 5 All Coats Failed

Multiple Defect?: False

Severity: 5 Non-functional

Extent: D Extensive 20 - 50%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: P Paint

Estimated Cost: £ 5,180

Comments: Photograph Nos.9 & 10 - (Typical) Existing paint system is beyond its useful life span. All paint coats failed. It is therefore recommended that consideration is given for re painting the parapet.

Span Number: 2

Element: Handrail/Parapets/Safety Fences (23)

Defect Type: 1 1 2 Minor surface rusting

Multiple Defect?: False

Severity: 2 Minor

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Photograph No.11 - (Typical) Localised areas of minor surface rusting on both parapet rails and post bases in all spans.

Span Number: 2

Element: Footway/Verge/Footbridge Surfacing (25)

Defect Type: 9 35 2 Cracks In Top Layer

Multiple Defect?: False

Severity: 2 Minor

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Photograph No13 - (Typical) Cracks are evident in top layer of the surfacing.

Span Number: 2

Element: Approach Rails/Barriers/Walls (35)

Defect Type: 99 ? .3 WDM Generic Defect Severity 3

Multiple Defect?: False

Severity: 3 Moderate

Extent: E Extensive >50%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Safety Fencing - Safety

Estimated Cost: £ 12,500

Comments: Photograph No.25 - Safety barrier currently single height OBB protecting slender pier at intermediate support No2. Due to increase traffic from new M74 on secondary carriageway barrier height / containment should be upgraded.

Span Number: 3

Element: Primary Deck Element (Table G4) (1)

Defect Type: 2 6 3 Cracks and crazing in areas of high flexure or cracks approx 1mm and easily visible

Multiple Defect?: False

Severity: 3 Moderate

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Investigation

Estimated Cost: £ 1

Comments: Photograph Nos.26,27 & 28 - Longitudinal and transverse cracking on of reinforced concrete deck slab and soffit >0.6mm in places. As the deck is post tensioned these cracks require further risk review to BD54/15 standard. A price has been included in span 2.

Span Number: 3

Element: Primary Deck Element (Table G4) (1)

Defect Type: 2 5 3 Major localised spalls possibly exposing shear links and/or main bars with general corrosion

Multiple Defect?: True

Severity: 3 Moderate

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Concrete - Repairs

Estimated Cost: £ 300

Comments: Photograph Nos.29, 30 & 31 - Localised areas of spalled concrete on soffit and deck slab exposing reinforcement in span No3.

Span Number: 3

Element: Half Joints (4)

Defect Type: 2 5 4 Joined up, deep spalls possibly exposing shear links and/or main bars with general and/or pitting corrosion

Multiple Defect?: False

Severity: 4 Severe

Extent: D Extensive 20 - 50%

Location: Not entered

Maintenance Priority Ranking: 4

Work Required: Concrete - Condition survey

Estimated Cost: £ 3,500

Comments: Photograph Nos.32, 33 & 34 - Cracked / delaminated and spalled concrete on soffit and parapet upstand of half joint at uplink side of span No3 on downlink side of intermediate support no4.

Span Number: 3

Element: Parapet Beam Or Cantilever (6)

Defect Type: 2 5 3 Major localised spalls possibly exposing shear links and/or main bars with general corrosion

Multiple Defect?: False

Severity: 4 Severe

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 4

Work Required: Concrete - Repairs

Estimated Cost: £ 2,000

Comments: Photograph Nos.35, 36, 37 & 38 - Parapet upstand showing evidence of scaling from frost damage and salt attack exposing aggregate of concrete in places. Also localised spalls on concrete of parapet fascia, upstand and in way of uplink expansion joints at half joints which is providing path for water to saturate joint interface below.
 Photograph Nos.39 & 40 - Moderate spalling exposing what looks like anchor blocks of the post tension at uplink half joint.

Span Number: 3

Element: Parapet Beam Or Cantilever (6)

Defect Type: 2 6 2 Cracks and crazing in areas of low flexural behaviour or cracks less than 0.3mm

Multiple Defect?: True

Severity: 2 Minor

Extent: B Slight <5%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: Concrete - Repairs

Estimated Cost: £ 1

Comments: Photograph No.41 - Minor random cracking with 40mm void and leaching at LHS on parapet fascia.

Span Number: 3

Element: Foundations (8)

Defect Type: 0 ? .0 Item present but not inspected

Multiple Defect?: False

Severity: 6 NOT APPLICABLE

Extent: F NOT APPLICABLE

Location: Not entered

Maintenance Priority Ranking: 0

Work Required: ?

Estimated Cost: Not Completed

Comments: Foundations buried no evidence at ground level to suggest problem with foundations at intermediate support No4.

Span Number: 3

Element: Pier/Column (11)

Defect Type: 2 6 2 Cracks and crazing in areas of low flexural behaviour or cracks less than 0.3mm

Multiple Defect?: False

Severity: 2 Minor

Extent: B Slight <5%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Minor early thermal cracks on uplink and downlink face of pier / column.

Span Number: 3

Element: Waterproofing (17)

Defect Type: 14 56 2 Damp Surface, Slight Water Stains On Soffit

Multiple Defect?: False

Severity: 3 Moderate

Extent: B Slight <5%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Waterproofing - Replacement

Estimated Cost: £ 27,000

Comments: Photograph Nos.42 & 47 -The soffit of the structure shows signs of seepage in span 3. The FTI states that the waterproofing is 43 years old and past its lifespan, should be considered for replacement in any future improvement scheme. Waterproofing is not present at localised areas due to weathering and foot traffic on the structure.

Span Number: 3

Element: Movement/Expansion Joints (18)

Defect Type: 99 ? .3 WDM Generic Defect Severity 3

Multiple Defect?: False

Severity: 3 Moderate

Extent: E Extensive >50%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Cyclic Maint - Expansion joints

Estimated Cost: £ 1

Comments: Photograph Nos.43 & 38 - Expansion joint rubber inserts at Half joints in span No3 blocked with debris. Spalling of upstand on uplink joint at right and left hand side.

Span Number: 3

Element: Movement/Expansion Joints (18)

Defect Type: 10 44 3 Sealant breached, strip sealant breached

Multiple Defect?: True

Severity: 3 Moderate

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: Joints - Repair

Estimated Cost: £ 1

Comments: Photograph No.45 - Polysulphide sealant de bonded at both sides of half joint in span 3.

Span Number: 3

Element: Movement/Expansion Joints (18)

Defect Type: 10 57 2 Minor leakage through joint

Multiple Defect?: True

Severity: 2 Minor

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Joints - Replace

Estimated Cost: £ 2,625

Comments: Photograph Nos.44 & 33 - Minor leakage through expansion joint rubber insert at both half joints in span 3 and through polysulphide joint in the parapet upstands at the half joints.

Span Number: 3

Element: Painting: Parapets/Safety Fences (21)

Defect Type: 4 17 5 All Coats Failed

Multiple Defect?: False

Severity: 5 Non-functional

Extent: D Extensive 20 - 50%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: P Paint

Estimated Cost: £ 11,470

Comments: Photograph Nos.9 & 10 - (Typical) Existing paint system is beyond its useful life span. All paint coats failed. It is therefore recommended that consideration is given for re painting the parapet in the long term.

Span Number: 3

Element: Handrail/Parapets/Safety Fences (23)

Defect Type: 1 1 2 Minor surface rusting

Multiple Defect?: False

Severity: 2 Minor

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Photograph No.11 - (Typical) Localised areas of minor surface rusting on both parapet rails and post bases in all spans.

Span Number: 3

Element: Footway/Verge/Footbridge Surfacing (25)

Defect Type: 99 ? .3 WDM Generic Defect Severity 3

Multiple Defect?: False

Severity: 3 Moderate

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Other - Surfacing

Estimated Cost: £ 2,000

Comments: Photograph No.47 - Footpath surfacing is breaking up exposing localised areas of concrete and which appear have no waterproofing. Waterproofing is not present at localised areas due to weathering and foot traffic on the structure.

Span Number: 3

Element: Footway/Verge/Footbridge Surfacing (25)

Defect Type: 9 35 2 Cracks In Top Layer

Multiple Defect?: True

Severity: 2 Minor

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Photograph No13 - (Typical) Cracks are evident in top layer of the surfacing.

Span Number: 3

Element: Approach Rails/Barriers/Walls (35)

Defect Type: 99 ? .3 WDM Generic Defect Severity 3

Multiple Defect?: False

Severity: 3 Moderate

Extent: E Extensive >50%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Safety Fencing - Safety

Estimated Cost: £ 12,500

Comments: Photograph No.25 - Safety barrier currently single height OBB protecting slender pier at intermediate support No4. Due to increase traffic for new M74 carriageway barrier height / containment should be upgraded.

Span Number: 4

Element: Primary Deck Element (Table G4) (1)

Defect Type: 2 6 3 Cracks and crazing in areas of high flexure or cracks approx 1mm and easily visible

Multiple Defect?: False

Severity: 3 Moderate

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Photograph Nos.48,49 & 50 - Longitudinal and transverse cracking on reinforced concrete deck slab and soffit >0.3mm in places.

Span Number: 4

Element: Primary Deck Element (Table G4) (1)

Defect Type: 2 5 3 Major localised spalls possibly exposing shear links and/or main bars with general corrosion

Multiple Defect?: True

Severity: 3 Moderate

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Concrete - Repairs

Estimated Cost: £ 1,000

Comments: Photograph No.51 - Localised areas of spalled concrete on soffit and deck slab exposing reinforcement in span No4 at RHS.

Span Number: 4

Element: Primary Deck Element (Table G4) (1)

Defect Type: 2 8 3 Delamination in areas of low flexural and/or shear action

Multiple Defect?: True

Severity: 3 Moderate

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Concrete - Repairs

Estimated Cost: £ 500

Comments: Photograph No.52 - Expansive corrosion of embedded reinforcement resulting in delamination and spalling exposing reinforcement on the soffit of the RC slab.

Span Number: 4

Element: Parapet Beam Or Cantilever (6)

Defect Type: 5 18 2 Minor Vegetation Causing No Structural Damage (Surface Mosses, Small Grass And Weeds)

Multiple Defect?: False

Severity: 2 Minor

Extent: D Extensive 20 - 50%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: Cyclic Maintenance - Vegetation

Estimated Cost: £ 1

Comments: Photograph No.53 - Moss growth on parapet upstand and fascia at both sides of span 4.

Span Number: 4

Element: Parapet Beam Or Cantilever (6)

Defect Type: 2 6 1 Hairline cracks, difficult to detect visually

Multiple Defect?: True

Severity: 1 As New / Insignificant

Extent: A No Significant Defect

Location: Not entered

Maintenance Priority Ranking: 1

Work Required: Non Cyclic Maintenance

Estimated Cost: £ 1

Comments: Hairline cracks difficult to detect visually.

Span Number: 4

Element: Foundations (8)

Defect Type: 0 ? .0 Item present but not inspected

Multiple Defect?: False

Severity: 6 NOT APPLICABLE

Extent: F NOT APPLICABLE

Location: Not entered

Maintenance Priority Ranking: 0

Work Required: ?

Estimated Cost: Not Completed

Comments: Foundations buried no evidence at ground level to suggest problem with foundations.

Span Number: 4

Element: Abutments (Incl. Arch Springing) (9)

Defect Type: 0 ? .0 Item present but not inspected

Multiple Defect?: False

Severity: 6 NOT APPLICABLE

Extent: F NOT APPLICABLE

Location: Not entered

Maintenance Priority Ranking: 0

Work Required: ?

Estimated Cost: Not Completed

Comments: Photograph No.54 - Due to geometry of soffit of the structure where it intersects with the revetment the bankseat abutment is hidden from view at end support No5.

Span Number: 4

Element: Bearings (13)

Defect Type: 12 53 2 Minor Cracks

Multiple Defect?: False

Severity: 2 Minor

Extent: B Slight <5%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Photograph No.55 - Minor cracking to top of elastomeric pad on bearing No.2 at ESP 5. Detailed inspection restricted due to access beneath soffit and bearing plinths.

Span Number: 4

Element: Bearing Plinth/Shelf (14)

Defect Type: 3 14 2 Minor hairline cracks and shallow spalls

Multiple Defect?: False

Severity: 2 Minor

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: Masonry - Repairs

Estimated Cost: £ 1

Comments: Photograph No.56 - Minor spalling of the mortar base around the bearings at ESP 5. Detailed inspection restricted due to access beneath soffit and bearing shelf.

Span Number: 4

Element: Superstructure Drainage (15)

Defect Type: 8 31 1 No Blockage Of Weep Holes, Outlets

Multiple Defect?: False

Severity: 1 As New / Insignificant

Extent: A No Significant Defect

Location: Not entered

Maintenance Priority Ranking: 1

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Gully drainage at end support No5 appear to be functioning with no blockage evident.

Span Number: 4

Element: Waterproofing (17)

Defect Type: 14 56 1 No Visible Sign Of Seepage

Multiple Defect?: False

Severity: 1 As New / Insignificant

Extent: A No Significant Defect

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: Waterproofing - Replacement

Estimated Cost: £ 14,250

Comments: The soffit of the structure shows no signs of seepage. The FTI states that the waterproofing is 43 years old and past its lifespan, should be considered for replacement in any future improvement scheme.

Span Number: 4

Element: Movement/Expansion Joints (18)

Defect Type: 99 ? .3 WDM Generic Defect Severity 3

Multiple Defect?: False

Severity: 3 Moderate

Extent: E Extensive >50%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Cyclic Maint - Expansion joints

Estimated Cost: £ 1

Comments: Photograph No.57 - Expansion joint rubber inserts at end support No5 joint in span No4 blocked with debris.

Span Number: 4

Element: Movement/Expansion Joints (18)

Defect Type: 10 44 4 Sealant missing, strip sealant missing/out

Multiple Defect?: True

Severity: 4 Severe

Extent: D Extensive 20 - 50%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Joints - Repair

Estimated Cost: £ 100

Comments: Photograph Nos.58 & 59 - Missing polysulphide sealant at both sides of ESP 5.

Span Number: 4

Element: Painting: Parapets/Safety Fences (21)

Defect Type: 4 17 5 All Coats Failed

Multiple Defect?: False

Severity: 5 Non-functional

Extent: D Extensive 20 - 50%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: P Paint

Estimated Cost: £ 5,920

Comments: Photograph Nos.9 & 10 - (Typical) Existing paint system is beyond its useful life span. All paint coats failed. It is therefore recommended that consideration is given for re painting the parapet.

Span Number: 4

Element: Handrail/Parapets/Safety Fences (23)

Defect Type: 1 1 2 Minor surface rusting

Multiple Defect?: False

Severity: 2 Minor

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Photograph No.11 - (Typical) Localised areas of minor surface rusting on both parapet rails and post bases in all spans.

Span Number: 4

Element: Handrail/Parapets/Safety Fences (23)

Defect Type: 5 18 3 Vegetation Growth On Or Near Bridge Causing Structural Damage And/Or Deformation E.G. Roots And Branches Of Nearby Trees, Small Tree/Plants Growing On Structure

Multiple Defect?: True

Severity: 3 Moderate

Extent: B Slight <5%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: Cyclic Maintenance - Vegetation

Estimated Cost: £ 1

Comments: Photograph No.65 - Vegetation growth encroaching on RHS parapet rail in span 4.

Span Number: 4

Element: Footway/Verge/Footbridge Surfacing (25)

Defect Type: 99 ? .3 WDM Generic Defect Severity 3

Multiple Defect?: False

Severity: 3 Moderate

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 3

Work Required: Other - Surfacing

Estimated Cost: £ 1,000

Comments: Photograph No.60 - Footpath surfacing uneven in areas it appears to have been treated with road salts / grit.

Span Number: 4

Element: Footway/Verge/Footbridge Surfacing (25)

Defect Type: 5 18 2 Minor Vegetation Causing No Structural Damage (Surface Mosses, Small Grass And Weeds)

Multiple Defect?: True

Severity: 2 Minor

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: Cyclic Maintenance - Vegetation

Estimated Cost: £ 1

Comments: Photograph No.61 - (Typical) Minor vegetation growth at both sides of the footpath.

Span Number: 4

Element: Footway/Verge/Footbridge Surfacing (25)

Defect Type: 9 35 2 Cracks In Top Layer

Multiple Defect?: True

Severity: 2 Minor

Extent: C Moderate 5 - 20%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: see Photograph No.60 - Cracks are evident in top layer of the surfacing with localised areas of top layer missing.

Span Number: 4

Element: Revetment/Batter Paving (30)

Defect Type: 99 ? .1 No Defect

Multiple Defect?: False

Severity: 1 As New / Insignificant

Extent: A No Significant Defect

Location: Not entered

Maintenance Priority Ranking: 1

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Revetment paving intact.

Span Number: 4

Element: Embankments (33)

Defect Type: 5 18 2 Minor Vegetation Causing No Structural Damage (Surface Mosses, Small Grass And Weeds)

Multiple Defect?: False

Severity: 2 Minor

Extent: D Extensive 20 - 50%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: Cyclic Maintenance - Vegetation

Estimated Cost: £ 1

Comments: Photograph Nos.62 & 63 - Vegetation growth and build of litter making area unsightly on embankment in span 4.

Span Number: 4

Element: Embankments (33)

Defect Type: 11 63 2 Minor subsidence and/or minor deformation

Multiple Defect?: True

Severity: 2 Minor

Extent: B Slight <5%

Location: Not entered

Maintenance Priority Ranking: 2

Work Required: N No Action Monitor Only

Estimated Cost: £ 1

Comments: Photograph No.64 - Minor undermining of parapet beam at uplink RHS of ESP 5.

Is lane rental required? Y

6.3 Concrete Impregnation

6.4 Works Estimates

Cost estimate for a practical package of maintenance works (all defects in a structure to be considered) or alternatively cost estimate for a special investigation.

Item

Cost (£)

Scheme Preparation
(to contract stage)

Contract Administration
(excluding tendering procedures, if applicable)

Site Supervision

Preliminaries

List of Defective Main Elements and their Repair/Remedial Costs

<i>Span</i>	<i>Element Name</i>	<i>Work Required</i>	<i>Estimated Cost</i>
1	Bearing Plinth/Shelf	Cyclic Maint - Bearings & bearing shelves	1
1	Waterproofing	Waterproofing - Replacement	12000
1	Movement/Expansion Joints	Joints - Repair	1
1	Movement/Expansion Joints	Joints - Replace	2625
1	Movement/Expansion Joints	Cyclic Maint - Expansion joints	1
1	Painting: Parapets/Safety Fences	P Paint	5180
1	Handrail/Parapets/Safety Fences	Cyclic Maintenance - Vegetation	1
1	Footway/Verge/Footbridge Surfacing	Other - Surfacing	1500
1	Revetment/Batter Paving	Cyclic Maintenance - Vegetation	1
1	Embankments	Cyclic Maintenance - Vegetation	1

2	Primary Deck Element (Table G4)	Investigation	2000
2	Parapet Beam Or Cantilever	Concrete - Repairs	500
2	Pier/Column	Concrete - Repairs	1000
2	Superstructure Drainage	Cyclic Maint - Drainage	1
2	Superstructure Drainage	Cyclic Maint - Drainage	1
2	Waterproofing	Waterproofing - Replacement	24500
2	Painting: Parapets/Safety Fences	P Paint	5180
2	Approach Rails/Barriers/Walls	Safety Fencing - Safety	12500
3	Primary Deck Element (Table G4)	Concrete - Repairs	300
3	Primary Deck Element (Table G4)	Investigation	1
3	Half Joints	Concrete - Condition survey	3500
3	Parapet Beam Or Cantilever	Concrete - Repairs	1
3	Parapet Beam Or Cantilever	Concrete - Repairs	2000
3	Waterproofing	Waterproofing - Replacement	27000
3	Movement/Expansion Joints	Joints - Replace	2625
3	Movement/Expansion Joints	Joints - Repair	1
3	Movement/Expansion Joints	Cyclic Maint - Expansion joints	1
3	Painting: Parapets/Safety Fences	P Paint	11470
3	Footway/Verge/Footbridge Surfacing	Other - Surfacing	2000
3	Approach Rails/Barriers/Walls	Safety Fencing - Safety	12500
4	Primary Deck Element (Table G4)	Concrete - Repairs	1000
4	Primary Deck Element (Table G4)	Concrete - Repairs	500
4	Parapet Beam Or Cantilever	Non Cyclic Maintenance	1
4	Parapet Beam Or Cantilever	Cyclic Maintenance - Vegetation	1
4	Bearing Plinth/Shelf	Masonry - Repairs	1
4	Waterproofing	Waterproofing - Replacement	14250
4	Movement/Expansion Joints	Joints - Repair	100
4	Movement/Expansion Joints	Cyclic Maint - Expansion joints	1
4	Painting: Parapets/Safety Fences	P Paint	5920
4	Handrail/Parapets/Safety Fences	Cyclic Maintenance - Vegetation	1
4	Footway/Verge/Footbridge Surfacing	Cyclic Maintenance - Vegetation	1
4	Footway/Verge/Footbridge Surfacing	Other - Surfacing	1000
4	Embankments	Cyclic Maintenance - Vegetation	1

Contingencies @44%	66506.00
Statutory Undertakers' Costs	
Special Inspections and Testing Services	
VAT (if payable)	43531.20
	Total £261,187.20

6.5 Headroom (for bridges over roads)

Headroom as reported in BMS. Report any changes and reasons.

Actual Minimum Headroom: 5.09m

Date measured: 05-Jul-2017

6.6 Remedial Measures

N/A

6.7 Special Inspection/Monitoring

N/A

6.8 Testing

N/A

6.9 Structural Review & Assessment

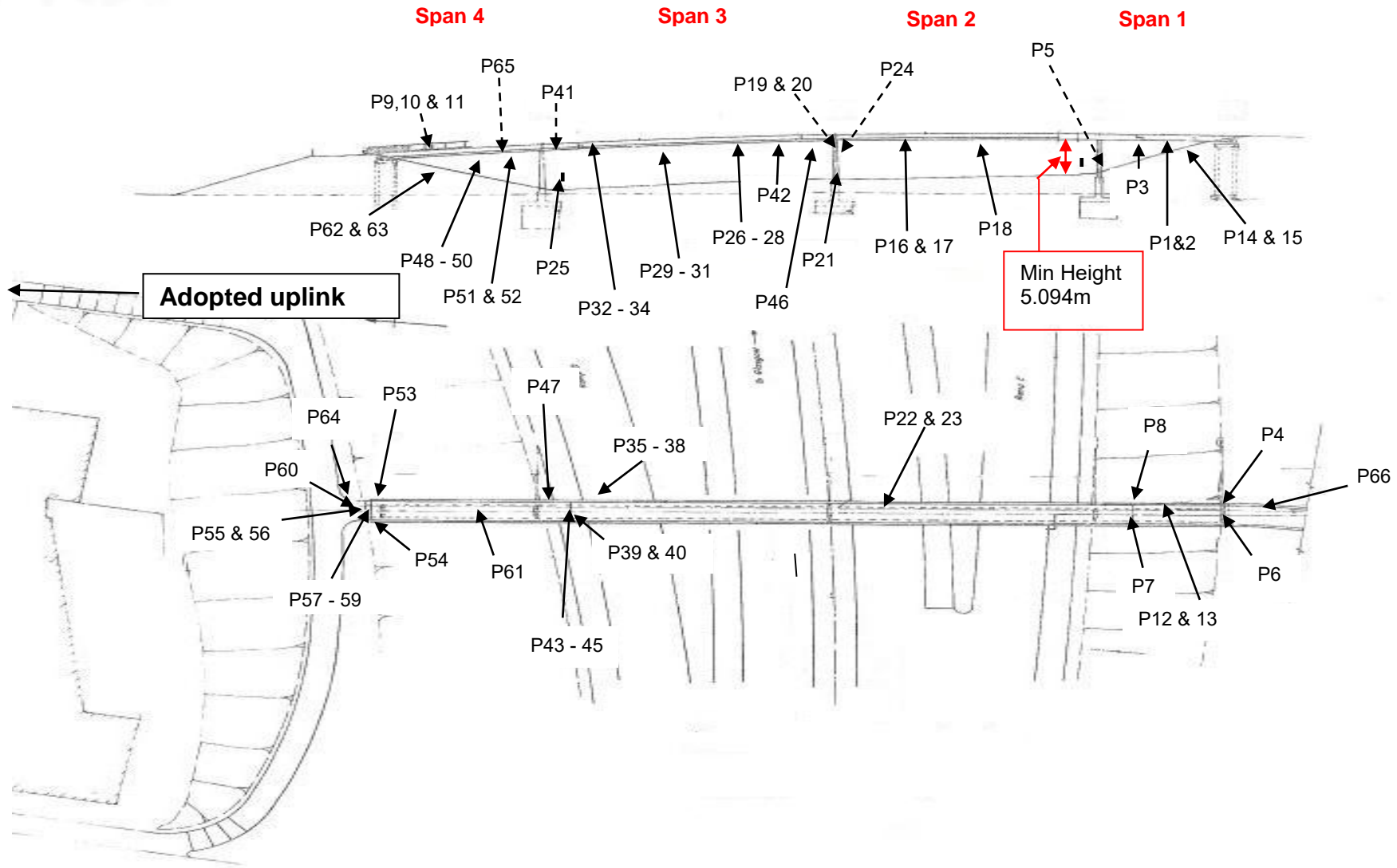
N/A

6.10 Scour Inspections & Assessments

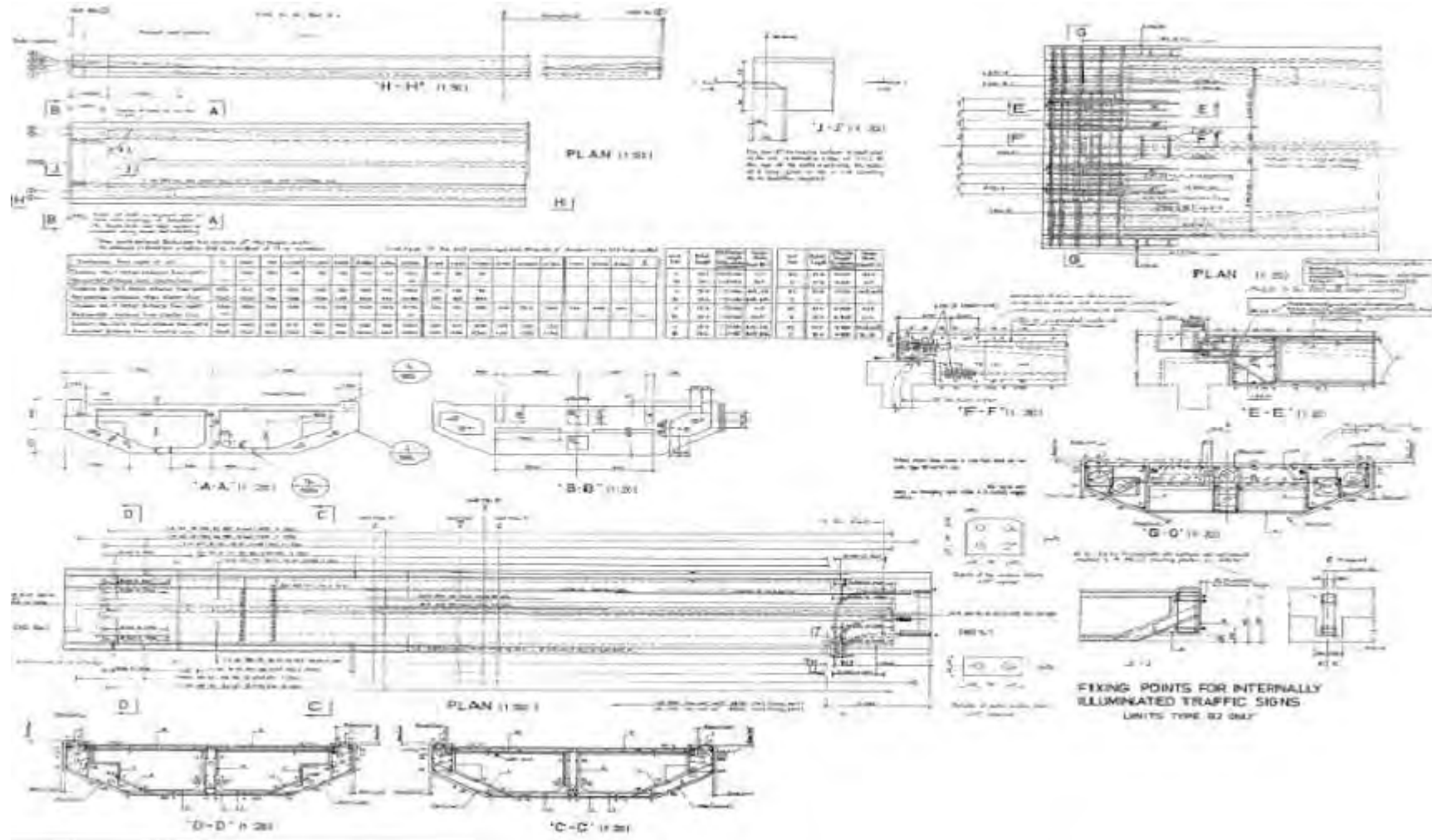
N/A

APPENDIX GA

General Arrangement Drawings



**M8 22-22 F40 Kirkwood Street F/B
 Principal Inspection Report 2017
 General Arrangement Drawing
 Defect Photograph Location Plan Sketch**



**M8 22-22 F40 Kirkwood Street F/B
Principal Inspection Report 2017
General Arrangement Drawing**

APPENDIX PH

Photographs



General view of left hand side of structure



General view looking at adopted uplink (Top)



General view looking at adopted downlink (Top)



Photograph No.1 - (Typical) Longitudinal and horizontal cracking of reinforced concrete deck slab and soffit >0.3mm in places. Also rust staining which may suggest early signs of delamination.



Photograph No.2 - (Typical) Longitudinal and horizontal cracking of reinforced concrete deck slab and soffit >0.3mm in places. Also rust staining which may suggest early signs of delamination.



Photograph No.3 - Staining at half joint as a result of seepage through de-bonding sealant at parapet upstand joint above in span 1.



Photograph No.4 - Leaching and dampness on exposed area of bank seat curtain wall at ESP 1.
Access to inspect area difficult due to access beneath soffit.



Photograph No.5 - Minor localised spalling exposing localised areas of reinforcement on ISP 2.



Photograph No.6 - Expansion joint rubber inserts at end support No1 in span No1 blocked with debris.



Photograph No.7 - Expansion joint rubber inserts at Half joint in span No1 blocked with debris.



Photograph No.8 - (Typical) Polysulphide sealant de bonded at both sides of ESP 1 and half joint in span 1.



Photograph No.9 - (Typical) Existing paint system is beyond its useful life span. All paint coats failed.



Photograph No.10 - (Typical) Existing paint system is beyond its useful life span. All paint coats failed.



Photograph No.11 - (Typical) Localised areas of minor surface rusting on both parapet rails and post bases in all spans.



Photograph No.12 - (Typical) Footpath surfacing appears to have been treated with road salts / grit which may affect the condition of the concrete. Surfacing is ponding due to existing levels and lack of drainage outlets.



Photograph No.13 - (Typical) Cracks are evident in top layer of the surfacing.



Photograph No.14 - Debris and build of litter making area unsightly on revetment in span 1.



Photograph No.15 - Moderate vegetation growth on embankment in span 1.



Photograph No.16 - Moderate localised spall where handrail parapet is recessed into concrete of parapet upstand. At LHS above lane 2 of M8 westbound.



Photograph No.17 - Moderate localised spall where handrail parapet is recessed into concrete of parapet upstand. At LHS above lane 2 of M8 westbound.



Photograph No.18 - Minor spall exposing reinforcement on soffit of deck slab at LHS.



Photograph No.19 - Expansive corrosion of embedded reinforcement is resulting in rust staining at top of intermediate support No3 on uplink face.



Photograph No.20 - Expansive corrosion of embedded reinforcement is resulting in rust staining at top of intermediate support No3 on uplink face.



Photograph No.21 - Minor impact damage on ISP 3 at LHS.



Photograph No.22 - Gully grating cover completely blocked preventing water from entering drainage system.



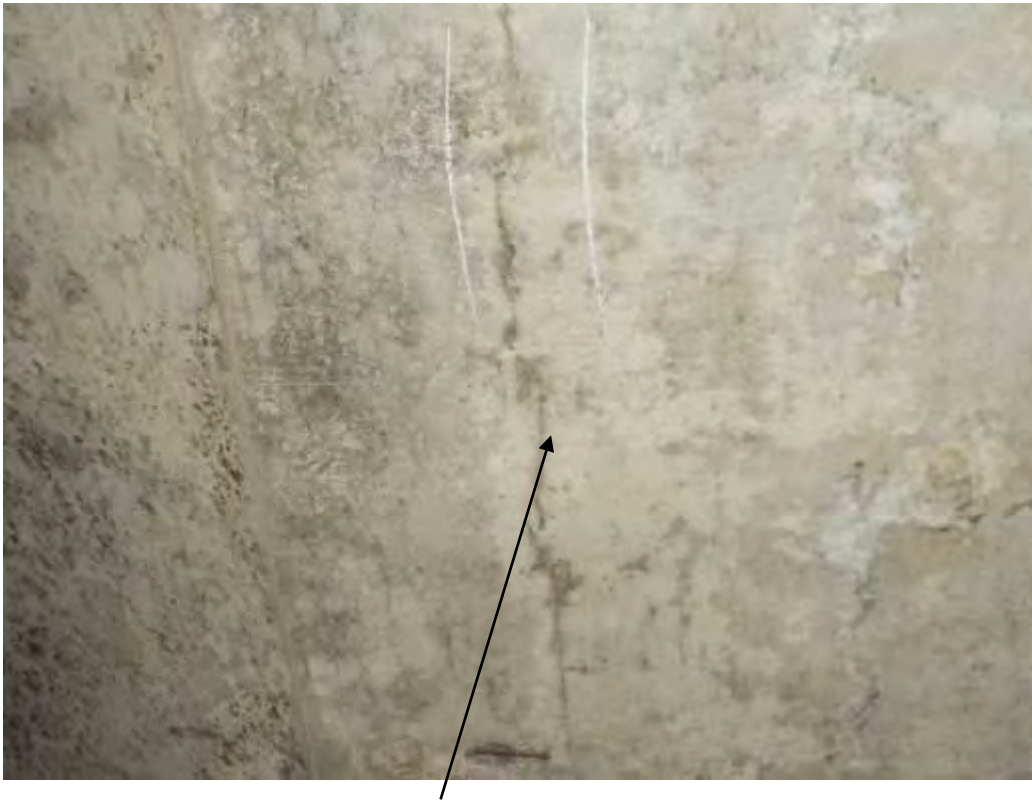
Photograph No.23 - Deck dripper blocked causing staining on Span 2 soffit adjacent ISP 3 downlink face.



Photograph No.24 - Random cracking at top of ISP 3 on downlink face.



Photograph No.25 - Safety barrier currently single height OBB protecting slender pier at intermediate support No2. Due to increase traffic from new M74 on secondary carriageway barrier height / containment should be reviewed.



Photograph No.26 - Longitudinal cracking of reinforced concrete deck soffit >0.3mm in places.



Photograph No.27 - Transverse cracking of reinforced concrete deck slab >0.6mm in places.



Photograph No.28 - Longitudinal cracking of reinforced concrete deck slab >0.3mm in places.



Photograph No.29 - Localised areas of spalled concrete on soffit and exposing reinforcement in span No3.



Photograph No.30 - Localised areas of spalled concrete on soffit exposing reinforcement in span No3.



Photograph No.31 - Localised areas of spalled concrete on deck slab exposing reinforcement in span No3.



Photograph No.32 - Cracked / delaminated and spalled concrete on soffit at half joint uplink side of span No3 on downlink side of intermediate support No4.



Photograph No.33 - Cracked / delaminated and spalled concrete on soffit and half joint at uplink side of span No3 on downlink side of intermediate support No4.



Photograph No.34 - Cracked / delaminated and spalled concrete on parapet upstand of half joint at uplink side of span No3 on LHS.



Photograph No.35 - Parapet upstand and showing evidence of scaling from frost damage and salt attack exposing aggregate of concrete in places.



Photograph No.36 - Parapet upstand and showing evidence of scaling from frost damage and salt attack exposing aggregate of concrete in places. Also localised spalls on concrete of parapet fascia.



Photograph No.37 - Parapet upstand and showing evidence of scaling from frost damage and salt attack exposing aggregate of concrete in places.



Photograph No.38 - Parapet upstand and showing evidence of scaling from frost damage and salt attack exposing aggregate of concrete in places at half joints which is providing path for water to saturate joint interface below.



Photograph No.39 - Moderate spalling exposing mortar cap to post tensioned anchor block at uplink half joint LHS.



Photograph No.40 - Moderate spalling exposing mortar cap to post tensioned anchor block at uplink half joint RHS.



Photograph No.41 - Minor random cracking with 40mm void and leaching at LHS on parapet fascia.



Photograph No.42 -The soffit of the structure shows signs of seepage in span 3.



Photograph No.43 - Expansion joint rubber inserts at Half joints in span No3 blocked with debris.



Photograph No.44 - Minor leakage through expansion joint rubber insert at both half joints in span 3 and through polysulphide joint in the parapet upstands at the half joints.



Photograph No.45 - Polysulphide sealant de bonded at both sides of half joint in span 3.



Photograph No.46 - Localised spall on deck slab exposing reinforcement at LHS of span No3.



Photograph No.47 - Footpath surfacing is breaking up exposing localised areas of concrete. Waterproofing is not present at localised areas due to weathering and foot traffic on the structure.



Photograph No.48 - Transverse cracking with leaching on reinforced concrete deck soffit >0.3mm in places.



Photograph No.49 - Longitudinal cracking on reinforced concrete deck soffit >0.3mm in places.



Photograph No.50 - Longitudinal and transverse cracking on reinforced concrete deck slab and soffit >0.3mm in places.



Photograph No.51 - Localised areas of spalled concrete on soffit and deck slab exposing reinforcement in span No4.



Photograph No.52 - Expansive corrosion of embedded reinforcement resulting in delamination and spalling exposing reinforcement on the soffit of the RC slab.



Photograph No.53 Moss growth on parapet upstand and fascia at both sides of span 4.



Photograph No.54 - Due to geometry of soffit of the structure where it intersects with the revetment the bankseat abutment is hidden from view at end support No5.



Photograph No.55 - Minor cracking to top of elastomeric pad on bearing No.2 at ESP 5. Detailed inspection restricted due to access beneath soffit and bearing plinths.



Photograph No.56 - Minor spalling of the mortar base around the bearings at ESP 5.



Photograph No.57 - Expansion joint rubber inserts at end support No5 joint in span No4 blocked with debris.



Photograph No.58 - Missing polysulphide sealant at both sides of ESP 5 parapet upstand.



Photograph No.59 - Missing polysulphide sealant at both sides of ESP 5 on parapet fascia.



Photograph No.60 - Footpath surfacing appears to have been treated with road salts / grit making it uneven in areas.



Photograph No.61 - (Typical) Minor vegetation growth at both sides of the footpath.



Photograph No.62 - Vegetation growth and build of litter making area unsightly on embankment in span 4.



Photograph No.63 - Vegetation growth and build of litter making area unsightly on embankment in span 4.



Photograph No.64 - Minor undermining of parapet beam at uplink RHS of ESP 5.



Photograph No.65 - Vegetation growth encroaching on RHS parapet rail in span 4.



Photograph No.66 - Vegetation growth encroaching on both parapet rails behind ESP 1.

APPENDIX FT

Changes to Full Text Inventory

COMMON ATTRIBUTES	Original	Updated	Date
Eastings			
Northings			
ACTUAL DIMENSIONS AND HEADROOM RESTRICTIONS			
Skew Angle Degrees			
Width Available on Bridge			
Deck Width			
Deck Overall Length			
Actual Minimum Headroom			
Date of Measuring Actual Minimum Headroom			
Signed Headroom Metric			
Signed Headroom Imperial			
Signed Headroom Mandatory			
Actual Navigation Clearance			
Minimum depth of surfacings			
Maximum Cover (<i>Culverts Only</i>)			
Minimum Cover (<i>Culverts Only</i>)			
CONCRETE COATING HISTORY			
Concrete Coating Manufacturer			
Concrete Coating Type			
Year Concrete Coating Applied			
Whole or Part Coating			
CONCRETE IMPREGNATION HISTORY			
Impregnant Type			
Concrete Silane Manufacturer			
Year Concrete Impregnation Applied			
CSS INFORMATION			
Construction Span			
Span Description			
Length of Span			
Span Width			
Primary Deck Element			
Primary Deck Element Material			
Secondary Deck Element			
Secondary Deck Element Material			
Number of Construction Forms			
Span Number			
Span Structural Form			
Span Structural Continuity			
Masonry Arch Barrel Rise At Crown			
Masonry Arch Barrel Rise At Quarter Points			
Thickness of Arch Barrel adjacent to Keystone			
Masonry Arch Average Fill To Crown			
Year of Widening			
Widening Left or Right			
Widening Designer			
CONTAINMENT			
Containment Location			
Containment Main Provision			
Containment Material Type			
Parapet Height			
Parapet Containment Infill Type			

DECK CARRIAGEWAY SURFACINGS

Carriageway
 Year Surfacing Installed

Surfacing Type
 Depth of Surfacing

Original Updated Date

FOUNDATIONS

Support Foundation Type
 Support Foundation Material
 Bridge Scour Protection Type

MIN PARAPET HEIGHT

Min Parapet Height

PROTECTIVE SYSTEM HISTORY

What the Protective System is applied to
 Year Protective System Applied
 Protective System Manufacturer
 Protective System

SPAN WATERPROOFING HISTORY

Year Waterproofing Installed
 Carriageway
 Waterproofing Manufacturer and Description
 Waterproofing Type
 Waterproofing Protective Layer

SUPPORT BEARING HISTORY

Support Number
 Bearing Number
 Year Bearing Installed
 Bearing Manufacturer and Description
 BS 5400 Section 9 1 Bearing Type

SUPPORTS

Support Number
 Support Structural Form
 Support Construction Detail
 Support End Fixity
 Abutment Gallery
 Distance Support to Carriageway
 Bearings Single or Double Row

SUPPORT JOINT HISTORY

Support Number
 Year Joint Installed
 Joint Installed By
 Joint Function
 Type of Joint
 Joint Manufacturer and Description

INSPECTION ACCESS AND WEATHER

First Access Equipment Used
 Second Access Equipment Used
 Third Access Equipment Used
 First Traffic Management System Used
 Second Traffic Management System Used
 Third Traffic Management System Used