NETWORK RAIL

Bridge Detailed Examination Report

ELR: COL	**Contract Mileage: 189m 0817yds 37.14chs**	**Struc. Ref: 64**
Examination Type: Bridge Detailed	**NR ID: 12010421**	**Exam Date: 12-Dec-2019**
Area: Central East	**BRS: 0**	**OS Ref: SJ83809750**
Structure Name: Whitworth Street, Manchester	**Type: BU**	**Exam ID: 2571143**
Route: London Road - Ordsall lane		**Complete Exam: No**

Section A: To Be Completed By The Examining Organisation

HIDDEN PARTS NOT EXAMINED (EXCLUDING FOUNDATIONS)	**Part**	**Reason**
	DS Soffit and pier internal faces. total approx. 40pc.	Clad, some soffit sheeting removed, internal faces or piers are plastered.

ITEM	DESCRIPTION	LOCATION	Est. Cost £ +/- 20%	Priority Within	Quantity	Severity	Probability	Risk Score	Works Category
1	Remove vegetation growing to elevations (repeat rec WI 1789706)	Downside string course	500.00	6yrs	1 unit	2	3	M6	Vegetation
2	Stitch and grout fractures to barrel. Pin and grout hollow areas to facerings and repoint LTH bricks and parapet fractures.	as described	3000.00	3yrs	7 unit	4	2	E8	Brickwork/Stone Repairs

History of Live Significant Defects

No	Description	Location	Exam Date	Access Gained	Exam Type	Rec Raised	Risk Score	Access Req'd	Deter - ioration	Repaired	Flagged for Closure	Engineer Comments
1	Unexamined parts due to sheeting. (soffit) and plaster (piers)	Internal elements	23/01/14	N	V	Y	8	Y	Baseline	N	N	Hidden critical elements
1	Unexamined parts due to sheeting. (soffit) and plaster (piers)	Internal elements	11/04/15	N	V	Y	8	Y	NV	N	N	No change
1	Unexamined parts due to sheeting. (soffit) and plaster (piers)	Internal elements	21/03/17	N	V	N	8	Y	NV	N	N	no change, see Work id 1504411 in CARRS
1	Unexamined parts due to sheeting. (soffit) and plaster (piers)	Internal elements	14/01/18	N	V	Y	8	Y	NV	N	N	No change
1	Unexamined parts due to sheeting. (soffit) and plaster (piers)	Internal elements	12/12/19	N	D	Y	8	Y	NV	N	N	Some cladding removed during exam, most of soffit viewed. Description updated for plastering to piers.
2	Several shrubs and saplings	Downside string course.	21/03/17	Y	V	N	6	Y	Baseline	N	N	no change, see Work id 1509156 in CARRS
2	Several shrubs and saplings	Downside string course.	14/01/18	Y	V	Y	6	Y	N	N	N	Old standing with no deterioration
2	Several shrubs and saplings	Downside string course.	12/12/19	Y	D	Y	6	Y	N	N	N	OS with SSD
3	7No. longitudinal fractures, max 3mm W. Calcite build up and dampness to 2no fractures.	Barrel	12/12/19	Y	D	Y	8	Y	Baseline	N	N	Unclear if OS, cladding not removed at previous exam. No movement noticed during load.
4	Hollowness to Arch LM quarter point and LTH bricks to curtain wall	DS elevation	12/12/19	Y	D	Y	6	N	Baseline	N	N	New tracked defect

ELR: COL **Contract Mileage: 189m 0817yds 37.14chs** **Struc. Ref: 64**

History of Live Significant Defects

No	Description	Location	Exam Date	Access Gained	Exam Type	Rec Raised	Risk Score	Access Req'd	Deter - ioration	Repaired	Flagged for Closure	Engineer Comments
5	3No. Fractures to parapet wall face and 1No. fracture between face rings and spandrel wall 1 -3mm W.	US elevation	12/12/19	Y	D	Y	6	N	Baseline	N	N	PPT fractures OS, face ring/ spandrel new.

Engineers Notes

[redacted]

NETWORK RAIL

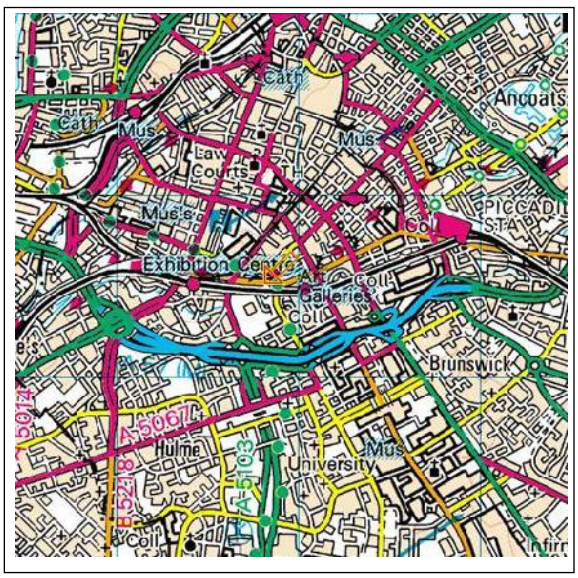
Bridge Detailed Examination Report

ELR: COL	**Contract Mileage: 189m 0817yds 37.14chs**			**Struc. Ref: 64**	
Struc Type BU	**NR ID** 12010421 **Rpt ID** 14791 **OS Ref** SJ83809750			**Exam ID**	2571143
Dimensions	Height 6.92m Length 11.70m Span 9.69m No. Spans: 1			**Exam Date**	12/12/2019
Primary Material	RBE - Brick			**Last Detailed**	29/4/2013
Secondary Material	RBE - Brick			**Last Visual**	14/1/2018
Structure Carries	Rail	**Over**	Land		
Line	London Road - Ordsall lane				
Name:	Whitworth Street, Manchester				

Elevation Photograph



Map Extract



Examiner's General Comments

The detailed examination of COL 64 (Whitworth Street, Manchester) was undertaken by XEIAD on
4th May 2019 – Trackside & Downside Elevation
12th Dec 2019 – Soffit, Piers & Upside Elevation

The Structure was found to be in an overall fair condition at the time of examination.

Note: Parts not examined due to enabling works being carried out prior to examination. A second floor kitchen is present with an additional ceiling which has prevented the cladding being removed and full tactile examination. Approx. 40% of soffit not examined (36m2). Photo 6b, 6c, 6d

Examined by Chris Reid (Soffit & Internals), Dwain Jones (Upside Elevation), Eli Culyer (Tracksdie) & Joe Duckworth (Downside Elevation)
Report by Craig Hughes

Has all the structure been examined? No (if no, see report for details)

Parts of Soffit still cladded - Internal Pier walls are plastered.

Has the structure been viewed under load? Yes



ELR: COL **Contract Mileage: 189m 0817yds 37.14chs** **Struc. Ref: 64**

Element Status Table

Element Name	Status	Condition
Arch Ring	Examined	Fair
Ballast Plates and Boards	N/A	N/A
Bearing	N/A	N/A
Cross Girders	N/A	N/A
Floor / Deck	N/A	N/A
Longitudinal Timbers	N/A	N/A
Main Girders	N/A	N/A
Parapets and Pilasters	Examined	Fair
Rail Bearers	N/A	N/A
Spandrels	Examined	Fair
Water Proofing	Not Included	N/A
Abutments	N/A	N/A
Bedstones and Cills	Not Examined	N/A
Columns and Cylinders	N/A	N/A
Piers	Examined	Fair
Trestles and Crossheads	N/A	N/A
Wing and Retaining Walls	N/A	N/A
Debris	Examined	Fair
Drainage	N/A	N/A
Gutters And Downpipes	N/A	N/A
Handrails	N/A	N/A
Painting	N/A	N/A
Pointing	Examined	Fair
Revetment Walls	N/A	N/A
Rivets and Bolts	N/A	N/A
Track/Road	Examined	Fair
Vegetation	Examined	Fair

Record of Observations Under Load

Load Type	General Area Observed	Result Of Observation	Date & Time

Avongards

Are Avongards Present?	No

Date Tabs

Are Date Tabs Present?	No

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Plumbing Points

Are Plumbing Points Present?	No

Environmental Factors Present: No

Item number	Description	Location

Record of Condition by Element

Element Name	Status	Condition
Arch Ring	Examined	Fair
Parapets and Pilasters	Examined	Fair
Spandrels	Examined	Fair
Water Proofing	Not Included	N/A
Bedstones and Cills	Not Examined	N/A
Piers	Examined	Fair
Debris	Examined	Fair
Pointing	Examined	Fair
Track/Road	Examined	Fair
Vegetation	Examined	Fair

The Structure is a Single Span Underbridge which is part of a Viaduct. The soffit is constructed from Red Bricks which has been Cladded. The soffit sits on two Red Brick Piers. Cladding was removed and scaffold erected by Network Rail to assist with the examination. Pier Faces were not examined due to being plastered.

Dimensions
Span: 9.680m
Length: 9.690m

Clearance downside - 2.800m
Clearance upside - 1.500m

Downside parapet height - 2.00m
Upside parapet height - 1.800m

The soffit was accessed using Scaffold. Upside Elevation was accessed using a MEWP. Downside Elevation was accessed using rope access techniques – Trackside was examined under a T3 Possession. All elements were examined using hand tools for a fully tactile examination.

Structure is located between Oxford Road (Low Mileage) & Deansgate (High Mileage)

The weather was clear/dry during and prior to the examination.

I confirm that the previous detailed and visual examination reports have been reviewed and the dates recorded within this report.

Last Detailed: 29/04/2013
Last Visual: 14/01/2018

STATUS OF PREVIOUSLY RECORDED SIGNIFICANT DEFECTS & STATUS OF RECOMMENDATIONS MADE AT PREVIOUS EXAMINATION

Live Significant Defects: Visual 14/01/2018
PREVIOUSLY RECORDED SIGNIFICANT (OPEN) DEFECT(S)
DEFECT NUMBER: 1
Originally identified at a Visual
Examination on: 23/01/2013
Defect location: Internal Elements
Defect Description: Unexamined parts due to sheeting
Dimensions:
Urgent: No
Status: Some Cladding remains
See Existing (Open) Significant Defect Photo: 5

PREVIOUSLY RECORDED SIGNIFICANT (OPEN) DEFECT(S)
DEFECT NUMBER: 2
Originally identified at a Visual
Examination on: 21/03/2017
Defect location: Downside String Course
Defect Description: Several Shrubs and Saplings
Dimensions:
Urgent: No
Status: Vegetation still remains/has worsened
See Existing (Open) Significant Defect Photo: 23

PREVIOUS RECOMMENDATIONS

Detailed Examination (29/04/2013):
NO ACTION

Visual Examination (14/01/2018):
1. Arrange for sheeting to be removed at next detailed exam (last detailed exam sheeting was not removed) LOCATION: Internal Sheeting to arch STATUS: Removed for exam
2. Remove shrubs and saplings from stringcourse to prevent damage LOCATION: Downside String Course STATUS: Some sections removed – isolated patches remain & worsened

GENERAL PHOTOGRAPHS

Photo 1 – Upside elevation
Photo 2 – Downside elevation
Photo 3 – Track view towards low mileage
Photo 4 – Track view toward high mileage
Photo 5 - Soffit general to low mileahe
photo 6 - Soffit general to high mileage
Photo 6b - Part not examined due to upstairs kitchen
Photo 6c - Part not examined due to upstairs kitchen
Photo 6d - Part not examined due to upstairs kitchen, exposed cladding behind ceiling.

SKETCHES
General Sketches
Sketch 1 – Location
Sketch 2 – Site Layout

Defect Sketches
Sketch 3 - Soffit
Sketch 4 – Upside Elevation
Sketch 5 – Downside Elevation

SUMMARY OF ELEMENTAL PARTS

ARCH RING (Red Brick)
Found to be in an overall fair condition at the time of examination. See Sketch 3, 4 & 5 for details.

PARAPETS AND PILASTERS
Parapets found to be in an overall fair condition at the time of examination. See Sketch 4 & 5 for details.
Trackside:
Upside – Photo 29, O/S Vertical fracture 2m x H/L-3mm SSD located over Pier 63 Photo 30 Previously noted Horizontal Fracture not found at the time of examination.
Downside – Photo 31
Previously Noted 4no. Missing Bricks & Hollowness were not found at the time of examination.

SPANDRELS
Spandrels found to be in an overall fair condition at the time of examination. See Sketch 4& 5 for details.

WATERPROOFING
Not Included.

BEDSTONES AND CILLS
Not examined – Covered by Plaster

PIERS
Only Pier Upside & Downside Elevations were examined, See Sketches 4&5. Internal faces not examined due to Plaster covering them. See Photos 27/28

DEBRIS
None found at the time of examination.

GUTTERS AND DOWNPIPES
None present

POINTING
Pointing was found to be in an overall fair condition at the time of examination.

TRACK/ROAD
Track was found to be in an overall fair condition at the time of examination.

VEGETATION
Isolated patches of vegetation were noted throughout the Downside Elevation. See sketch 5 for details.

SIGNS
None present at the time of examination.

KEY

General

Dia. – Diameter
G.L – Ground Level
M.H – Manhole
N.F.D – No Further Deterioration
WL – Water Level
Col – Column
No. – Number
O/S – Old Standing
S.S.D – Shows Slight Deterioration

Masonry and Concrete

H – Hollow
H/L – Hairline
L.T.H – Loose to Hammer
O.J – Open Joints
DT – Date Tab
Sp. – Spall

New / Worsened Fracture (line thickness to reflect fracture width) *(Red Line)*

Old Standing Fracture – NFD (line thickness to reflect fracture width) *(Blue Line)*

Spalling / Missing Brickwork *(Light Grey)*

Open Joints *(Yellow)*

Bulging / Out of Plumb / Displacement *(Brown)*

Indications of wetness *(Light Blue)*

H — Hollow / Drummy *(Black outline of area with "H")*

Date Tab / Avonguard (must also show installation date & reading) *(Black)*

Fractures

V.F – Vertical Fracture
V.S.F – Vertical Stepped Fracture
B.J.F – Bed Joint Fracture
D.F – Diagonal Fracture
D.S.F – Diagonal Stepped Fracture
HF – Horizontal Fracture
X<>mm – displaced by <> mm. *(+/- indicates direction of displacement)*

Metal

MG – Main Girder
XG – Cross Girder
BF – Bottom Flange
TF – Top Flange
CI – Cast Iron
WI – Wrought Iron
Corr – Corrosion
Lam – Lamination
LOS – Loss of Section
KE – Knife Edge

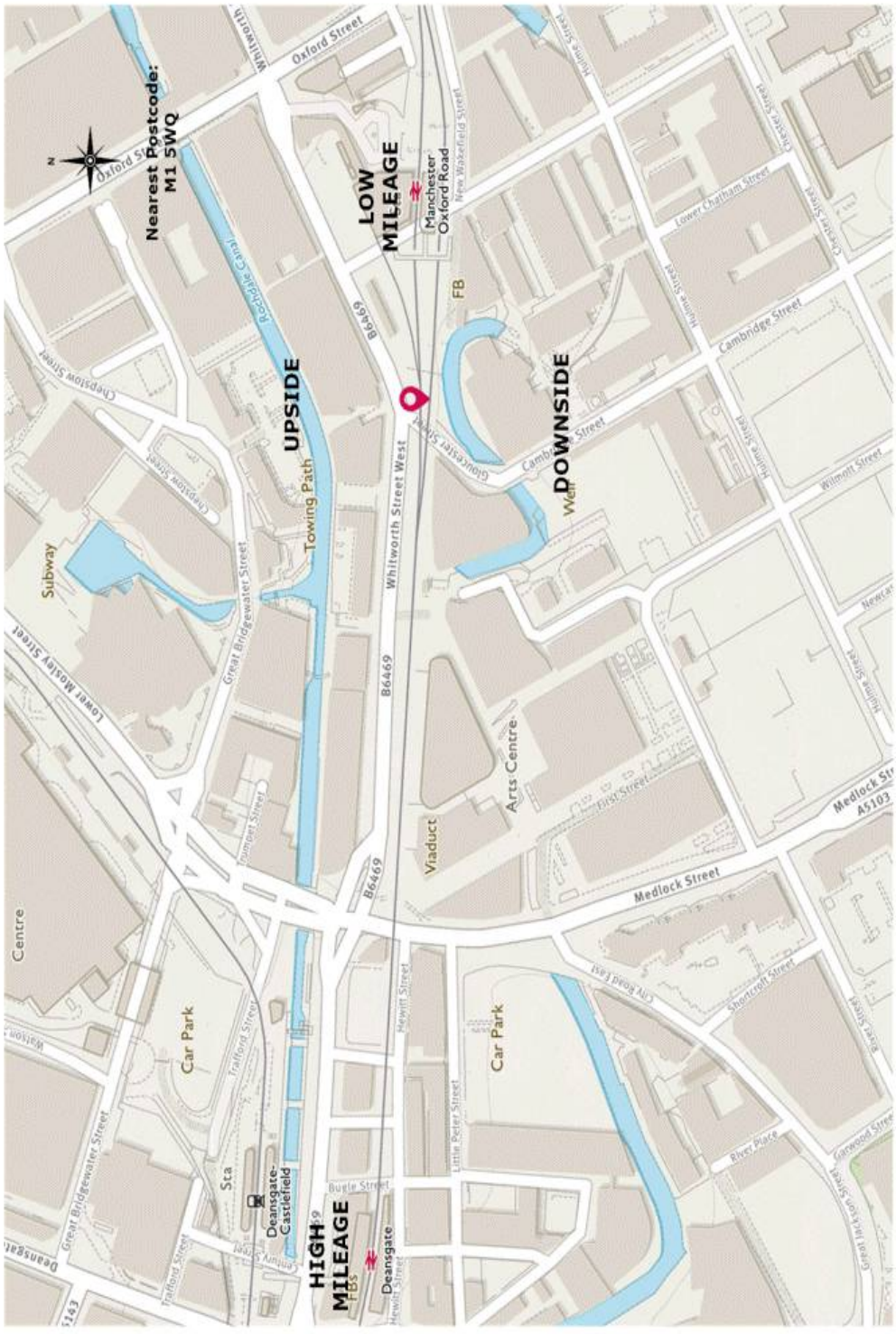
Corrosion / Lamination *(Light Orange)*

Fractures / Tears / Cracked Welds *(Red Line)*

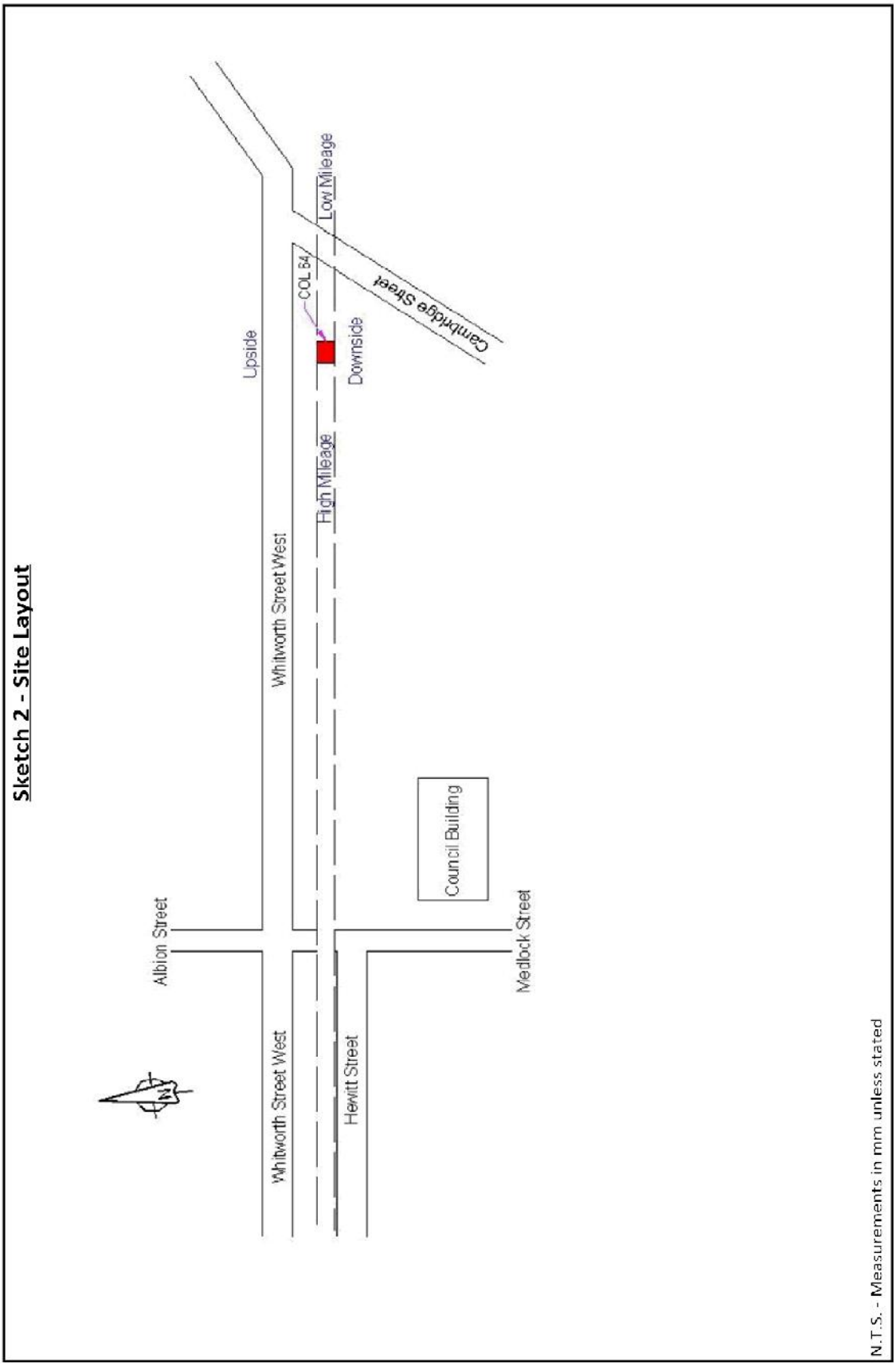
Loss of Section / Buckling *(Red)*

Version 1.1 April 2008

Sketch 1 - Location



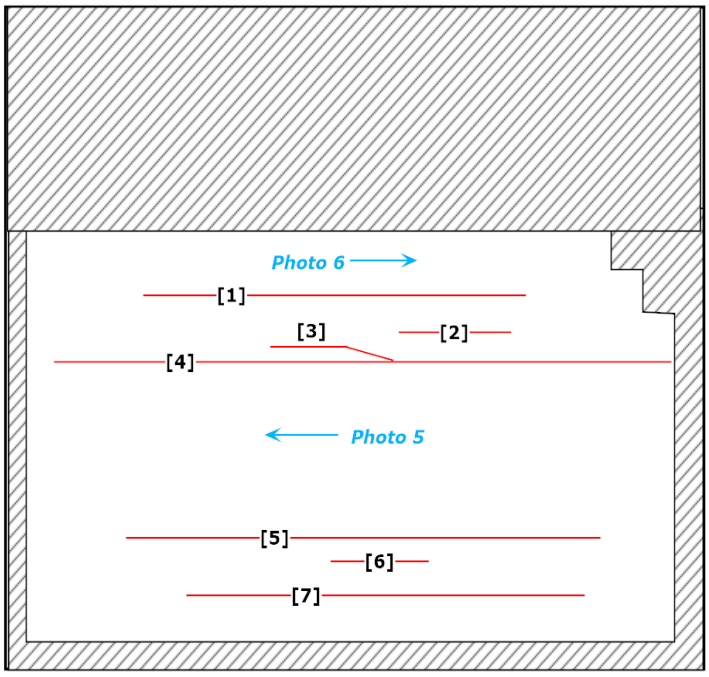
N.T.S. - Measurements in mm unless stated


Sketch 2 - Site Layout
Low Mileage
COL 64
Cambridge Street
Upside
Downside
High Mileage
Whitworth Street West
Council Building
Albion Street
Medlock Street
Whitworth Street West
Hewitt Street
N
N.T.S. - Measurements in mm unless stated

Sketch 3 - Soffit

= Cladding

DOWNSIDE



LOW MILEAGE

HIGH MILEAGE

UPSIDE

General comments

Parts not examined due to enabling works being carried out prior to examination. A second floor kitchen is present with an addition al ceiling which has prevented the cladding being removed and full tactile examination. Approx 40% of soffit not examined (36m2). Photo 6b, 6c, 6d

[1] NEW Longitudinal Fracture 6.5m x HL-1mm Photo 7

[2] NEW Longitudinal Fracture 800mm x H/L Photo 8

[3] NEW Longitudinal Fracture 1m x 1mm Photo 9

[4] NEW Longitudinal Fracture 9m x H/L-3mm with Calcite Deposits & Wetness Photo 10/11

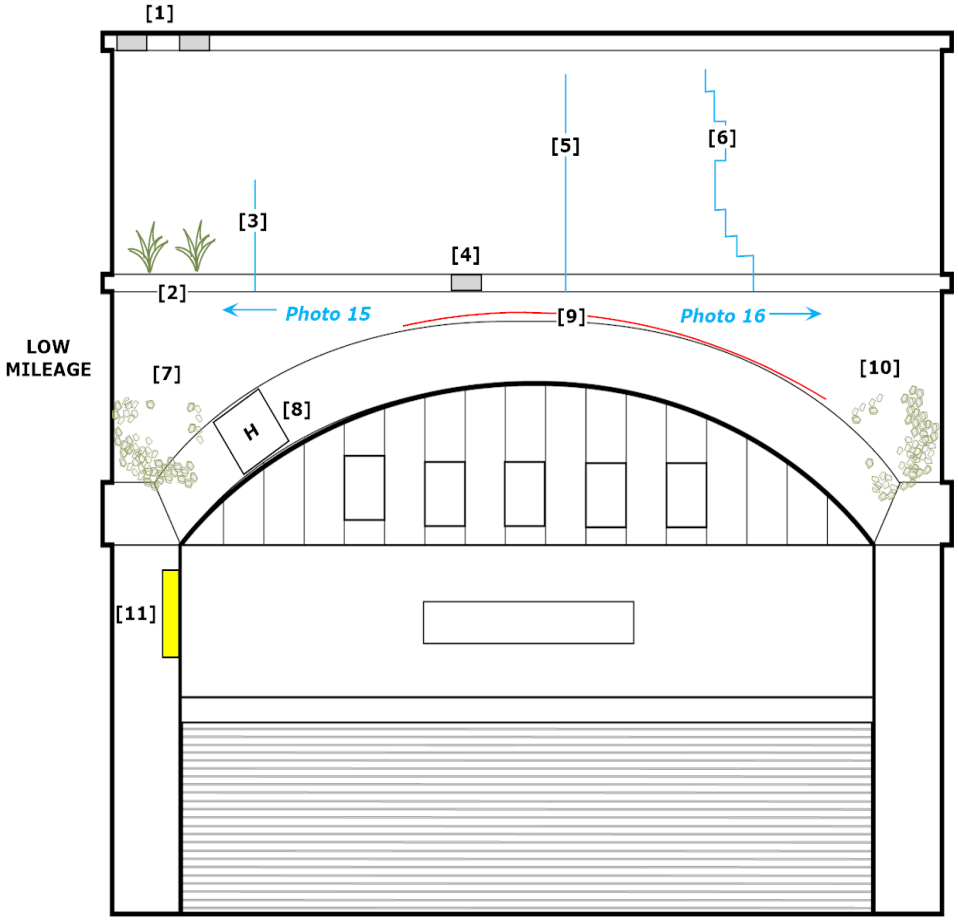
[5] NEW Longitudinal Fracture 6m x H/L - 1mm with Calcite Deposits Photo 12

[6] NEW Longitudinal Fracture 1.3m x H/L - 1mm Photo 13

[7] NEW Longitudinal Fracture 4.5m x H/L - 1mm Photo 14

N.T.S. - Measurements in mm unless stated

Sketch 4 - Upside Elevation



[1] **NEW** 2no. Areas of Spalling 0.8m x 40mm x 40mm total Photo 17

[2] **NEW** Vegetation 1m^2

[3] **O/S** Vertical Fracture 0.7m x H/L SSD Photo 18

[4] **NEW** Spalling 150 x 40 x 40mm Photo 19

[5] **O/S** Vertical Fracture 2.5m x H/L NFD

[6] **O/S** Vertical Fracture 2.5m x H/L NFD

[7] **NEW** 1m^2 Vegetation Photo 20

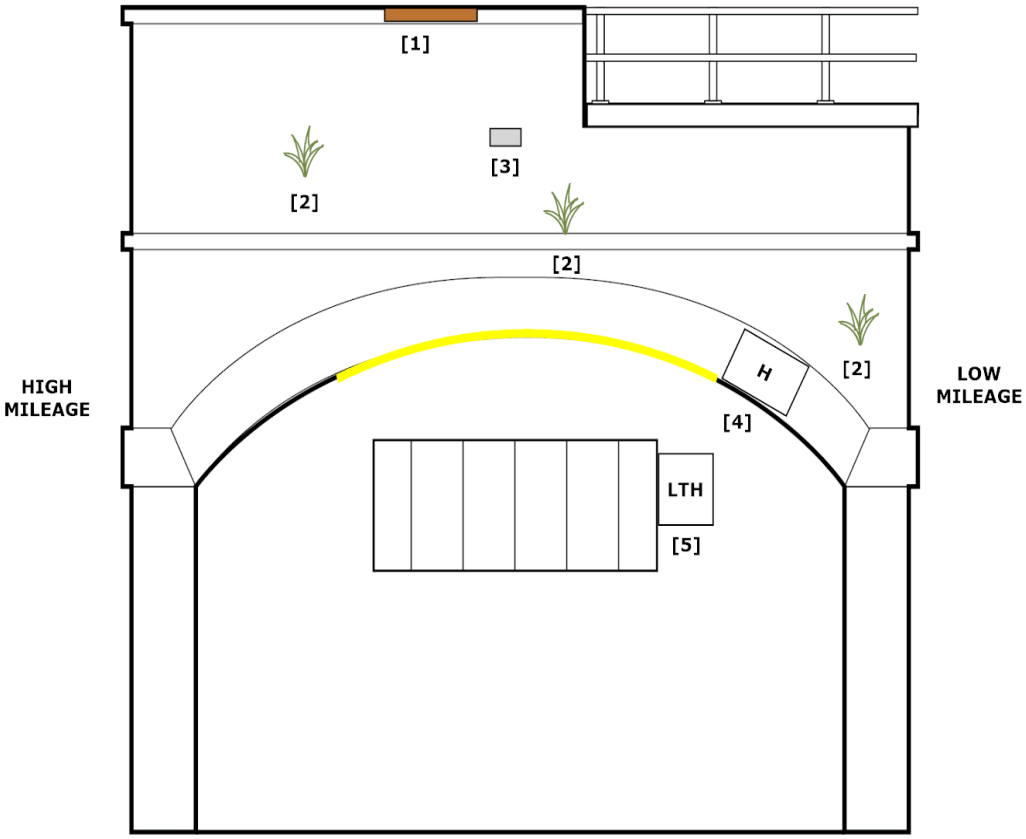
[8] **O/S** Hollow 2.5m^2 NFD

[9] **NEW** Separation Fracture 8m x 1-3mm Photo 21

[10] **NEW** 1m^2 Vegetation

N.T.S. - Measurements in mm unless stated

Sketch 5 - Downside Elevation



[1] NEW Displaced Coping Stone x 10mm Photo 22

[2] NEW Isolated Vegetation throughout up to 2m^2 Photo 23

[3] NEW 1no. Spallied Brick x 30mm

[4] NEW Hollow 1.5m^2 Photo 24

[5] NEW 6no. Bricks Loose to Hammer, 1no. Missing Photo 25

[6] O/S Open Joint 4m x 5mm open, 50mm deep NFD Photo 26

N.T.S. - Measurements in mm unless stated



P1 Upside Elevation



P2 Downside Elevation



P3 Track view to Low Mileage



P4 Track view to High Mileage



P5 Soffit General to Low Mileage



P6 Soffit General to High Mileage



P6b - Part not examined due to upstairs kitchen - 12.12.19



P6c Part not examined due to upstairs kitchen



P6d Part not examined due to upstairs kitchen, exposed cladding behind ceiling - 12.12.19



P7 Soffit Longitudinal Fracture 6.5m x HL-1mm



P8 Soffit Longitudinal Fracture 800mm x HL



P9 Soffit Longitudinal Fracture 1m x 1mm



P10 Soffit Longitudinal Fracture 9m x HL-3mm with Calcite deposits & wetness



P11 Soffit Longitudinal Fracture 9m x HL-3mm with Calcite deposits & wetness



P12 Soffit Longitudinal Fracture 6m x HL-1mm with Calcite deposits



P13 Soffit Longitudinal Fracture 1.3m x HL-1mm



P14 Soffit Longitudinal Fracture 4.5m x HL-1mm



P15 Upside Elevation Spandrel to Low Mileage



P16 Upside Elevation Spandrel to High Mileage



P17 Upside Elevation 2no. Areas of Spalling to coping 0.8m x 40 x 40mm



P18 Upside Elevation Vertical Fracture 0.7m x HL



P19 Upside Elevation Spalling 150 x 40 x 40 to String Course



P20 Upside Elevation 1m2 Vegetation



P21 Upside Elevation Separation Fracture 8m x 1-3mm to facrerings



P22 Downside Elevation Coping Displaced x 10mm



P23 Downside Elevation Isolated Vegetation throughout 2m2



P24 Downside Elevation 1.5m2 Hollow to Facreings



P25 Downside Elevation 6no. Bricks Loose to Hammer & 1no. Missing



P26 Downside Elevation Open Joints 4m x 5mm, 50mm deep



P27 Internal Pier Faces covered by Plaster



P28 Internal Pier Faces covered by Plaster



P29 Upside Parapet Internal Face



P30 Upside Parapet Internal Face Vertical Fracture 2m x HL-3mm over Pier 63



P31 Downside Parapet Internal Face

NETWORK RAIL BCMI EXAMINATION REPORT FORM

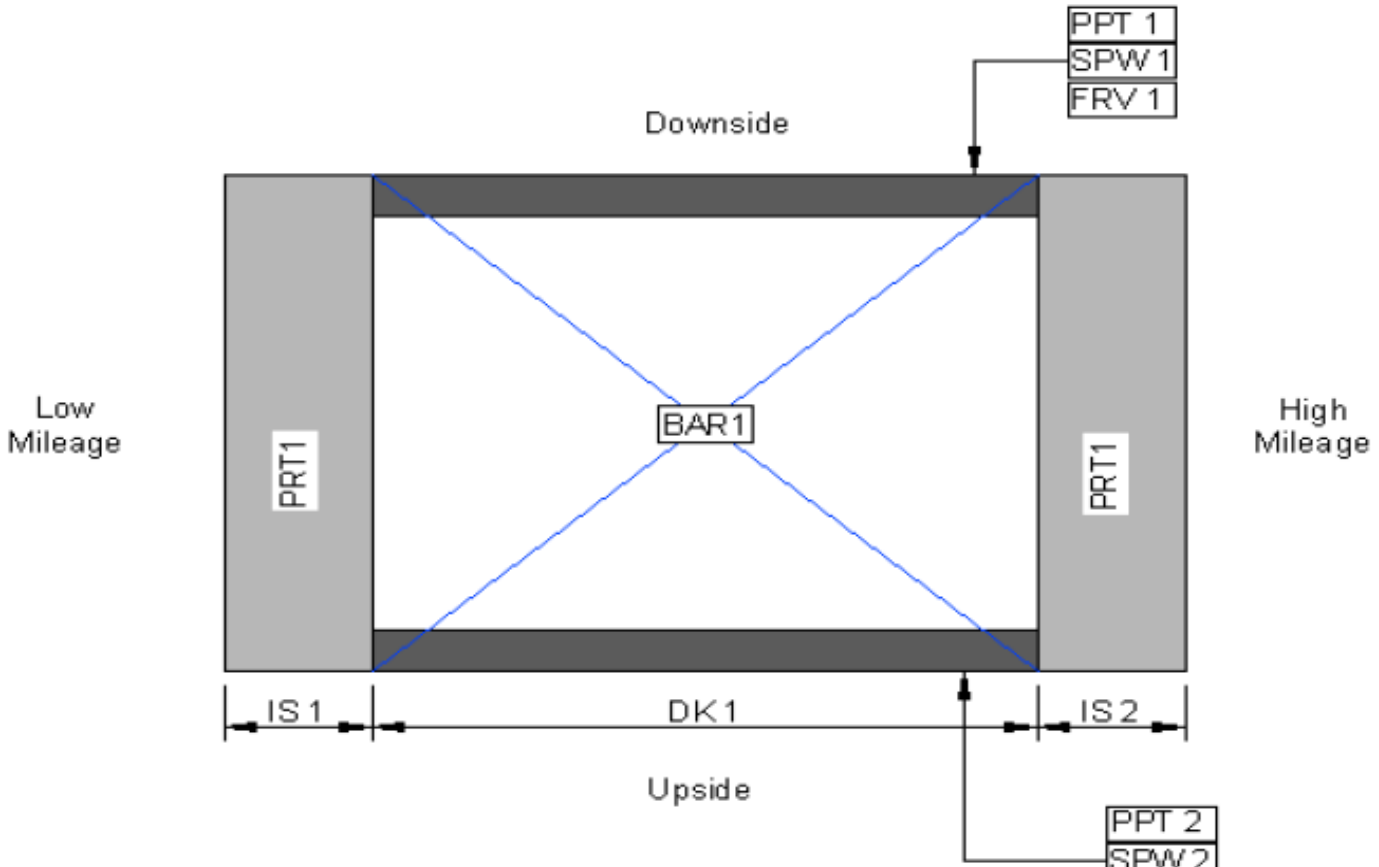
Territory	ELR	Structure No	Start Mileage	Group	Type	RAR ID	Structure Name	Exam Date	Task Year	Exam Type	Examiners Name	Weather
TLNE	COL	64	189.0817	BB	BBU		WHITWORTH STREET MANCHESTER	12/12/2019	18_19	D	CHRIS REID	FAIR

Major Element		Minor Element			Metal / Masonry / Concrete / Timber		Coated Metal / Cracked Masonry			Comments
Code	No	Code	No	Material	S/Ex 1	S/Ex 2	S/Ex 1	S/Ex 2	V	Note: This free text area of the report should be used extensively and can be enlarged as necessary.
IS	1	PRT	1	B	C3	B4	A1	A1	✓	OPEN JOINTS GENERAL WEATHERING
IS	1	PCL	1	B	B4	A1	A1	A1	✓	GENERAL WEATHERING SPALLING
DK	1	FRV	1	B	E3	B4	M9	A1	✓	HOLLOW GENERAL WEATHERING SEPARATION FRACTURE 1-3MM
DK	1	FRV	2	B	E3	B4	A1	A1	✓	HOLLOW GENERAL WEATHERING
DK	1	SPW	1	B	B4	A1	A1	A1	✓	GENERAL WEATHERING
DK	1	SPW	2	B	B4	A1	A1	A1	✓	GENERAL WEATHERING
DK	1	PPT	1	B	D4	A1	J9	G10	✓	VERTICAL FRACTURE HL-3MM GENERAL WEATHERING
DK	1	PPT	2	B	D4	A1	A1	A1	✓	GENERAL WEATHERING SPALLING
DK	1	BAR	1	B	B4	A1	J9	G10	✓	LONGITUDINAL FRACTURE HL-3MM
IS	2	PRT	1	B	B4	A1	A1	A1	✓	GENERAL WEATHERING
IS	2	PCL	2	B	B4	A1	A1	A1	✓	GENERAL WEATHERING

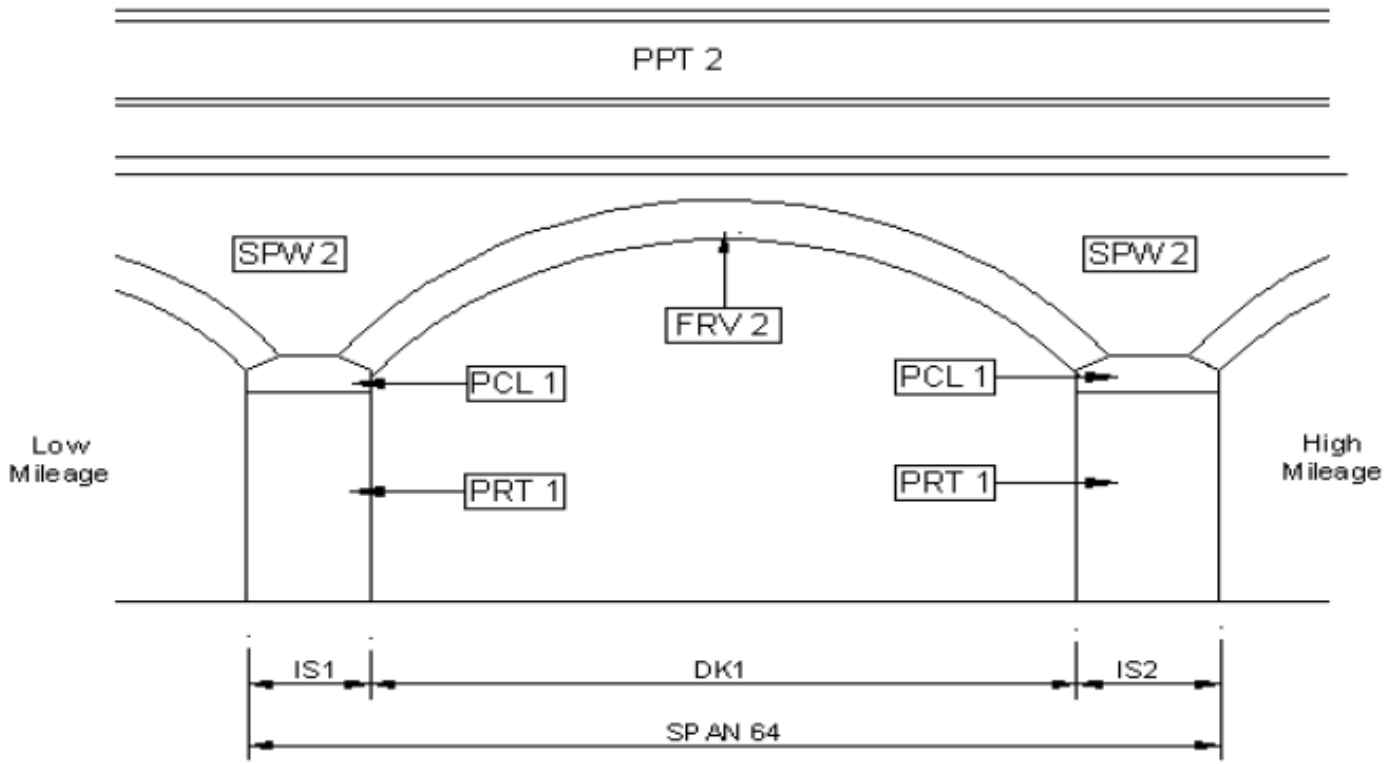
NETWORK RAIL BCMI EXAMINATION REPORT FORM

Major Element				
Code	**No**	**Material**	**Span No**	**V**
IS	1	B	1	✓
DK	1	B	1	✓
IS	2	B	1	✓

NETWORK RAIL BCMI EXAMINATION REPORT FORM



SKETCH 1 - BCMI LAYOUT
COL SPAN 64 (NTS)



SKETCH 2 - BCMI - UPSIDE ELEVATION
COL SPAN 64 (NTS)

NETWORK RAIL BCMI EXAMINATION REPORT FORM

Territory	ELR	Structure No	Start Mileage	Group	Type	RAR ID	Structure Name	Exam Date	Task Year	Exam Type	Examiners Name	Weather
TLNE	COL	64	189.0817	BB	BBU		WHITWORTH STREET MANCHESTER	12/12/2019	18_19	D	CHRIS REID	FAIR

Major Element		Minor Element			Metal / Masonry / Concrete / Timber		Coated Metal / Cracked Masonry			Comments	Scores		
Code	No	Code	No	Material	S/Ex 1	S/Ex 2	S/Ex 1	S/Ex 2	V	Note: This free text area of the report should be used extensively and can be enlarged as necessary.	Min El BCMI	Maj El BCMI	BCMI
DK	1	BAR	1	B	B4	A1	J9	G10	✓	LONGITUDINAL FRACTURE HL-3MM	65	69	81
DK	1	FRV	1	B	E3	B4	M9	A1	✓	HOLLOW GENERAL WEATHERING SEPARATION FRACTURE 1-3MM	60		
DK	1	FRV	2	B	E3	B4	A1	A1	✓	HOLLOW GENERAL WEATHERING	60		
DK	1	PPT	1	B	D4	A1	J9	G10	✓	VERTICAL FRACTURE HL-3MM GENERAL WEATHERING	65		
DK	1	PPT	2	B	D4	A1	A1	A1	✓	GENERAL WEATHERING SPALLING	65		
DK	1	SPW	1	B	B4	A1	A1	A1	✓	GENERAL WEATHERING	88		
DK	1	SPW	2	B	B4	A1	A1	A1	✓	GENERAL WEATHERING	88		
IS	1	PCL	1	B	B4	A1	A1	A1	✓	GENERAL WEATHERING SPALLING	88	86	
IS	1	PRT	1	B	C3	B4	A1	A1	✓	OPEN JOINTS GENERAL WEATHERING	85		
IS	2	PCL	2	B	B4	A1	A1	A1	✓	GENERAL WEATHERING	88	88	
IS	2	PRT	1	B	B4	A1	A1	A1	✓	GENERAL WEATHERING	88		