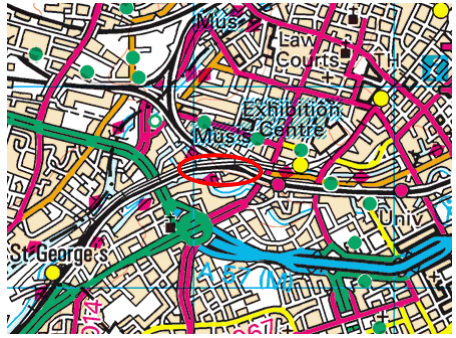
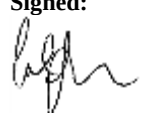
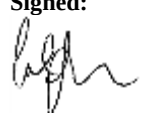
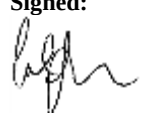


ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

General view of structure: Elevation 	Location map  Aerial View 				
A Detailed Examination of this structure has been carried out to establish the condition, identify the nature, severity and extent of defects, ascertain the rate of deterioration by reference to the previous examination reports and identify the scope, extent and urgency of any remedial actions required to ensure the continued safety and long-term integrity of the structure.	<table border="1"> <tr> <td>Examiner: C. Harden</td><td>Signed: </td></tr> <tr> <td>Date:</td><td></td></tr> </table>	Examiner: C. Harden	Signed: 	Date:	
Examiner: C. Harden	Signed: 				
Date:					

Access to structure:

Park on road adjacent to the structure at the OS grid ref.
Access to Network Rail infrastructure and isolation of OHL equipment required for Span 1.
Some land beneath viaduct is possibly within private ownership.

Recommendations:

Repair broken stave to palisade fencing at E end of structure - PS £500
Remove loose rust debris to isolated piers trusses, W abutment and span 8 ballast wall - P1 £8k.
Replace drainage bracket to pier 4S and guttering brackets to soffit of span 2 - P1 £2k.
Install drainage pipes to flooded bottom booms of spans 6S, 8N and 8S and re-examine elements - P1 £6k.
Remove all ballast from recently installed guttering system to span 5 - P1 £2.5k.
Repair major losses of section to top boom of S truss of span 2 - P1 £10k.
Annually monitor widespread fractures to piers - P1 £n/a.
Clean shelf areas, remove sapling and replace heavily corroded bearings to W abutment - P2 £15k.
Stitch repair fracture to pier 1S column - P2 £15k.
Remove root growth and vegetation to pier 3S, pier 4S and make good - P2 £1.5k.
Repair minor losses of section throughout piers particularly at tops - P3 £20k.
Ditto to trusses generally and replace odd connections - P3 £30k.
Remove all areas of corrosion to connections between main and transverse girders at decks 2-8, repair/repaint - P3 £30k.

Signed by Examining Engineer:



Digitally signed
by Richard
Storey
Date: 2020.11.04
17:01:04 Z

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
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Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Examination undertaken within 12 months of previous VE and six years of previous DE:-

No.

Reason for late examination:-

Programme delivery issues.

Site issues/impediments to undertaking DEs or other works:-

Working at height. Working over water (canal), roads, NRIL operational railway and private car parks. Roped access/MEWP/boat required. Works over private land seek access permissions. Access to NRIL required for span 1. Divers required to examine underwater parts.

Use of former track bed:-

None.

Evidence of repair / maintenance / survey works undertaken since previous examination:-

New gutters had been installed to the soffits.

Ecological Issues:-

None.

Services as latest Examination Safety Report?

N/a

Evidence of change to services:-

N/a

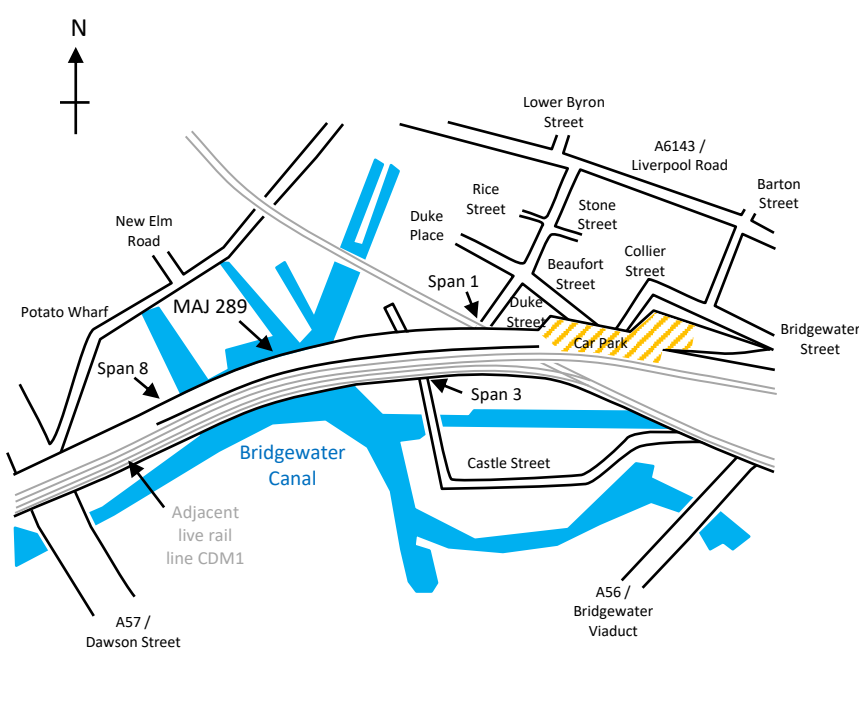
Examination Method:

The structure was examined on foot, using ladders, roped access, MEWP and a boat. Soffits were accessed with MEWP and using tensioned lines in accordance with roped access codes of practice to enable a tactile examination.

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
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Carrying/Over: Disused rail / Canal, rail, road & land		No. of spans: 8	

Condition:	Y/N	Comments
Operational railway	N	Operational railway on adjacent structure and beneath span 1
Canal and Rivers Trust	Y	Canal basin – Contact Peel Ports
Traffic management	N	
Full road closure	N	
Height restriction signs (at site)	N	
Height restriction signs (advanced)	N	
Weight Restriction Signs (at Site)	N	
Weight restriction signs (advanced)	N	
Inaccessible parts	Y	Span 1 was out of remit due to live rail / OHLE below the structure. The east abutment was fenced off. OLE attached to soffit of span 1.
Existing datals/Avongards	N	
Plumbing points	N	
New monitoring/control fitted during examination	N	
PRA required	N	
UW exam undertaken (examiner probing)	Y	No evidence of scour was found
UW exam undertaken (diving team)	N	
Vegetation removed during DE	N	
New padlocks fitted	N	
Non-dedication plates fitted	N	
Inspection for Assessment	N	
MEXE	N	
Bat handler present	N	

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
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Name of Part :	G - Good F - Fair P - Poor	Sketch/Remarks on Examination
Truss and Lattices	F/P	Orientation Sketch: 
Main Girders/Beams	F/P	
Cross Girders	F/P	
Jack Arches	/	
Tie Rods/Bracing	F/P	
Rail Bearers	/	
Deck Plates/Floor	F	
Longitudinal Timbers	/	
Rivets/Bolts/Stiffeners	F	
Bearings	F/P	
Bedstones & Cills	/	
Columns & Cylinders	F	
Trestles & Crossheads	/	
Ballast Plates/Boards	F	
Painting	F/P	
Arch Rings/Voussoirs	/	
Soffit	F	
Abutments	F	
Piers	/	
Wing Walls & Newel Posts	/	Risk Assessment: The examination was carried out in accordance with Generic Method Statement for Detailed Examinations Appendix v.
Buttresses	/	
Retaining Walls	/	
Spandrels	/	
Stringcourses	/	
Parapets & Pilasters	/	
Pointing	/	
Waterproofing	N/E	
Drainage	F	
Gutters & Downpipes	F	
Handrails & Fencing	F	General Comments: The bridge was in fair to poor condition overall with numerous minor areas of loss of section throughout the trusses and soffits. Flooding to lower boom sections and ballast build up to sections of new guttering system. Loose vertical strut to palisade fencing to end of deck.
Condition of approach fencing and risks to public	/	
Track/Road Condition	/	
Foundations	N/E	
Vegetation	F/P	
Bridge Number/Mileage	G	
Bridge Number Painted	G	

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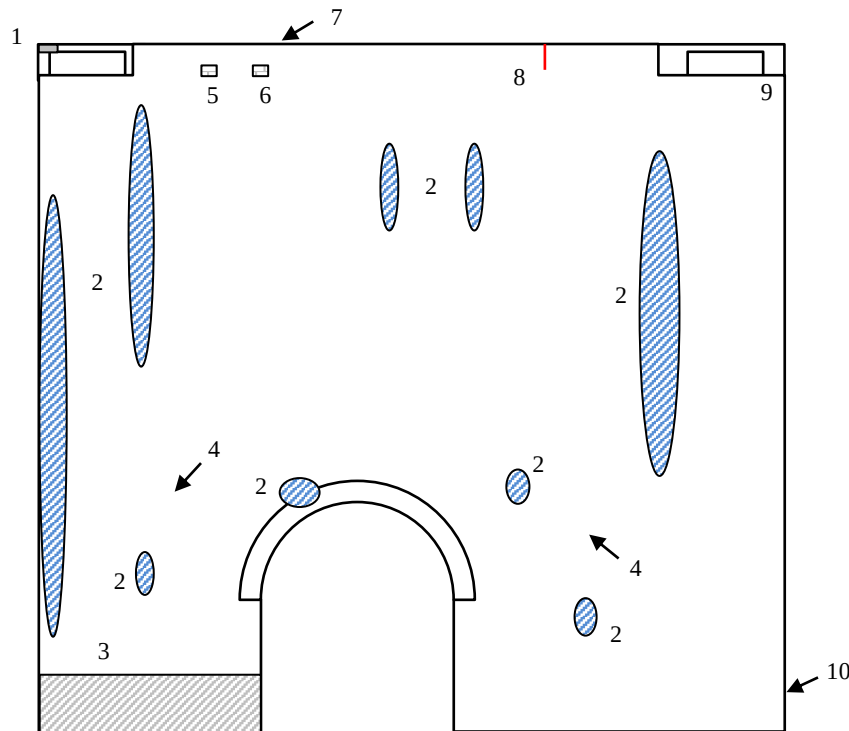
Examiner Comments on Structure condition

East Abutment

Fencing blocked access to the abutment. (photos 18)

West Abutment (photo 19)

There were spot areas of green staining throughout the abutment. The brickwork had been largely re-pointed. The bearing shelf was generally in fair condition. (photo 20) The bearing of the north main external girder had loss of thickness of up to 8mm with spot loss of section of up to 100 x 30mm with rust debris to the shelf beneath. (photos 21 & 22) There was debris to the bearing shelf adjacent to the north bearing. (photo 23) The bearing of the south main external girder had loss of thickness of up to 10mm with spot loss of section of up to 60 x 10mm with rust debris to the shelf beneath. (photos 24 & 25) The bearings of the main internal girders had loss of thickness of up to 4mm to the base plates. (photo 26)



1. 3No. missing bricks and 2No. bricks displaced outwards by +80mm. (photo 27)
2. Spot areas of seepage, water staining and leachate deposits totalling 9m². (photo 28)
3. Area of mortar loss, 2000 x 500 x up to 30mm, with light vegetation growth. (photo 29)
4. 2No. areas of non-offensive graffiti. (photo 28)
5. Area of spalled concrete to bearing plinth, 300 x 200 x up to 50mm. (photo 30)
6. Area of spalled concrete to bearing plinth, 300 x 20 x up to 20mm.
7. Area of rust debris to bearing plinth, 600 x 300mm. (photo 31)
8. Vertical fracture through concrete to bearing plinth, 300 x 1mm. (photo 32)
9. Sapling growing to bearing shelf, 30mm in diameter. (photo 33)
10. Area of missing / spalled brickwork, possibly due to vehicle strike, 120 x 150 x up to 30mm. (photo 34)

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Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Examiner Comments on Structure condition

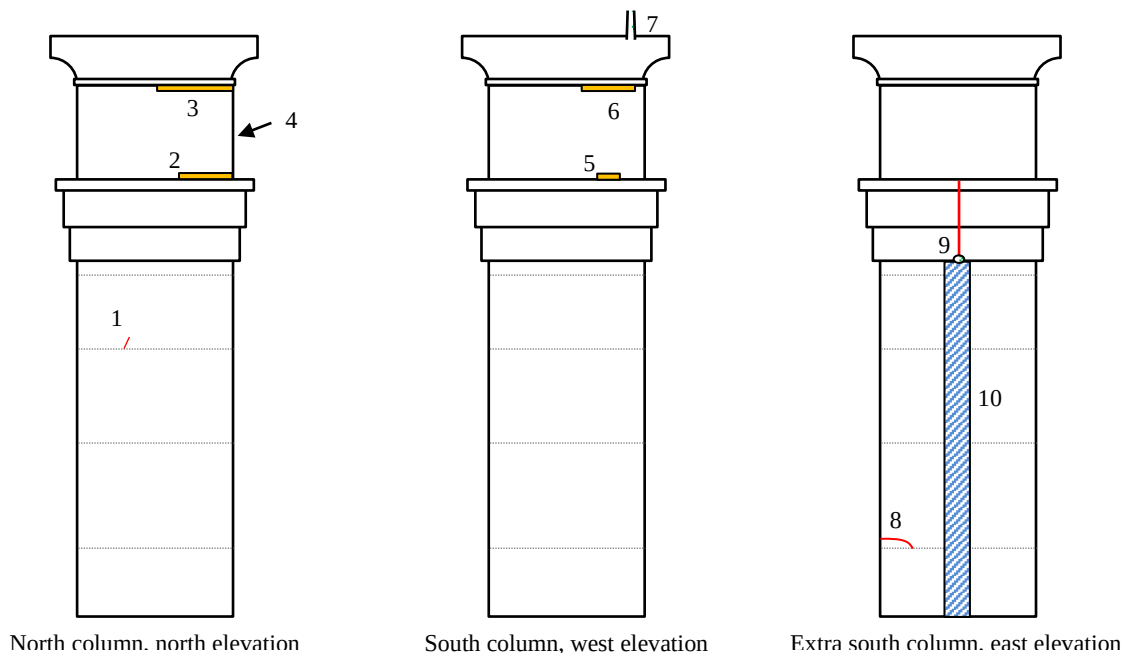
Pier 1

North column: (photo 35) There were areas of hairline map cracking to paintwork, paint loss and surface corrosion throughout, especially to the panel joints. The top section of the column had widespread paint loss and surface corrosion. There was light debris to the top of the pier.

South column: (photo 36) There were areas of hairline map cracking to paintwork, paint loss and surface corrosion throughout, especially to the panel joints.

Interconnecting truss: (photo 36) The truss was in fair condition with spot areas of paint loss and surface corrosion. There was an area of loss of section to the north end of the lower west flange, 30 x 10mm. (photo 37)

Extra column to centre of south side of span: (photo 38) There were areas of hairline map cracking to paintwork, paint loss and surface corrosion throughout, especially to the panel joints.



1. Diagonal hairline fracture, 160mm in length.
2. Area of loss of thickness to lower angle, 2000 x 80 x up to 10mm. (photo 39)
3. Area of loss of section to upper angle, 3000 x 80mm. (photo 40)
4. Area of loss of thickness, 1100 x 300 x up to 4mm.
5. Area of loss of section to lower angle, 700 x 80mm.
6. Area of loss of section to upper angle, 1000 x 80mm.
7. Area of vegetation growth. (photo 41)
8. Horizontal fracture, 4000 x 1mm. (photo 42)
9. Vertical fracture, 1200 x up to 15mm, with area of vegetation growth to base. (photo 43)
10. Area of seepage with associated algae growth. (photo 44)

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Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

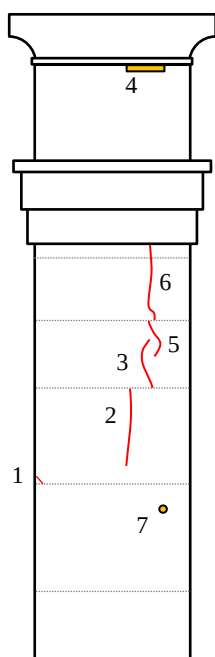
Examiner Comments on Structure condition

Pier 2

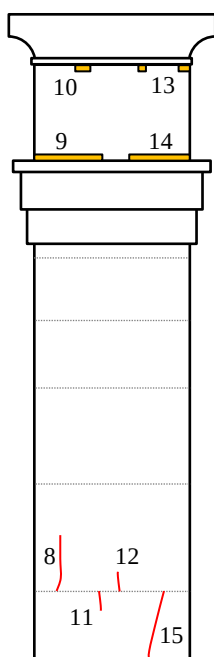
North column: There were areas of hairline map cracking to paintwork, paint loss and surface corrosion throughout, especially to the lower half and panel joints.

South column: (photo 45) There were areas of hairline map cracking to paintwork, paint loss and surface corrosion throughout, especially to panel joints.

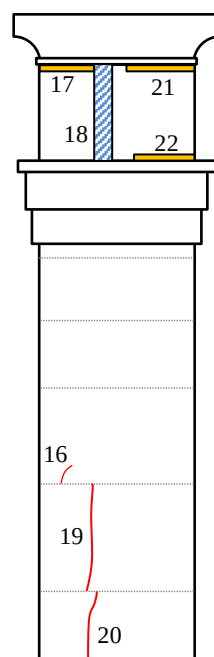
Interconnecting truss: (photo 45) The truss was in fair condition with spot areas of paint loss and surface corrosion. There was an area of loss of thickness to the middle of the upper west flange, 1000 x 500 x 1mm. There was an area of loss of thickness to the lower west flange connection to the south column, 1000 x 200 x up to 4mm. There was an area of loss of thickness to the top flange adjacent to the north column, 600 x 300 x 1mm.



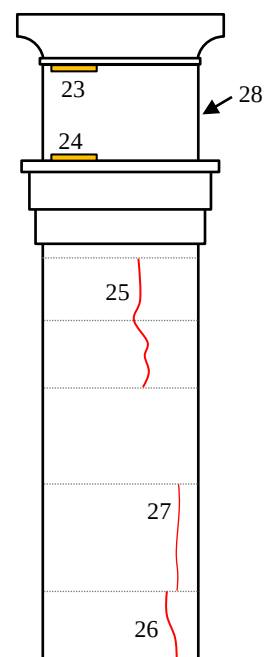
North column, north elevation



North column, south elevation



South column, north elevation



South column, south elevation

1. Diagonal hairline fracture, 400mm in length.
2. Vertical fracture, 1900 x 1mm.
3. Diagonal fracture, 900 x 1mm. (photo 46)
4. Area of loss of section to upper angle, 1200 x 80mm.
5. Diagonal fracture, 1200 x up to 2mm. (photo 46)
6. Vertical fracture, 1900 x up to 2mm.
7. Area of loss of thickness, 20 x 10 x up to 3mm. (photo 47)
8. Vertical fracture, 1800 x 1mm.
9. Area of loss of section to lower angle, 2000 x 45mm. (photo 48)
10. Area of loss of section to upper angle, 600 x 80mm.

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Examiner Comments on Structure condition

11. Vertical hairline fracture, 400mm in length.
12. Vertical hairline fracture, 400mm in length.
13. 2No. areas of loss of section to upper angle totalling 550 x 80mm. [\(photo 49\)](#)
14. Area of loss of thickness to lower angle, 2000 x 80 x up to 4mm, with loss of section 800 x 50mm.
15. Vertical fracture, 1500 x up to 2mm.
16. Diagonal hairline fracture, 600mm in length.
17. Area of loss of section to upper angle, 2000 x 80mm.
18. Area of seepage with associated loss of thickness, 1500 x 400 x up to 3mm. [\(photo 50\)](#)
19. Vertical fracture, 2000 x up to 3mm. [\(photo 51\)](#)
20. Vertical fracture, 2000 x up to 2mm.
21. Area of loss of section to upper angle, 2000 x 80mm.
22. Area of loss of section to lower angle, 2000 x 70mm.
23. Area of loss of section to upper angle, 1000 x 80mm.
24. Area of loss of section to lower angle, 1200 x 80mm.
25. Diagonal fracture, 2800 x up to 2mm.
26. Diagonal fracture, 2000 x up to 2mm.
27. Vertical hairline fracture, 2000mm in length.
28. Clamp / stiffener missing packing timber with loss of thickness of up to 6mm to connection bolts. [\(photo 52\)](#)

Pier 3

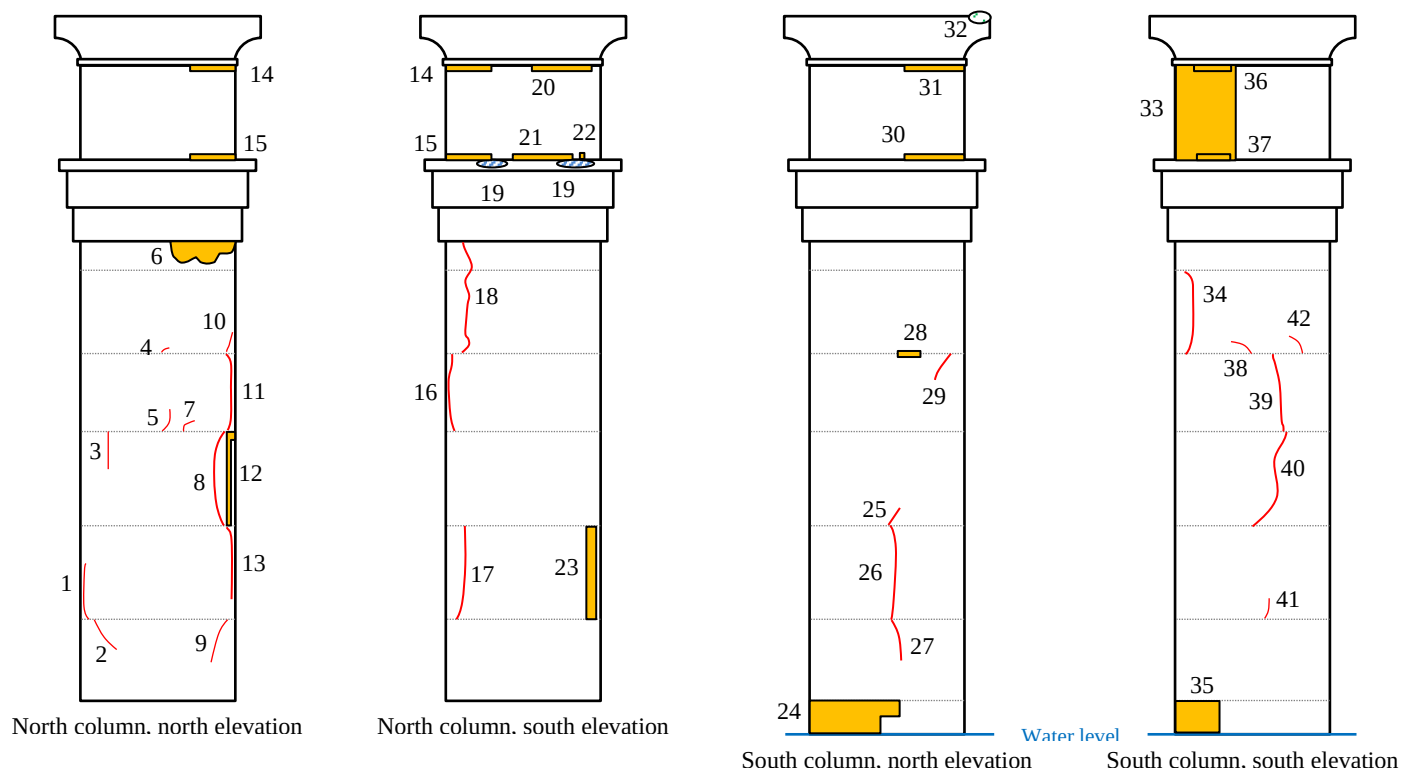
North column: [\(photo 53\)](#) There were areas of hairline map cracking to paintwork, paint loss and surface corrosion throughout, especially to panel joints. There were spot areas of graffiti to the base of the column, occasionally offensive. [\(photo 54\)](#)

South column: [\(photo 55\)](#) There were areas of hairline map cracking to paintwork, paint loss and surface corrosion throughout, especially to panel joints. Brackets and fixings to the drain pipe running down the column had spot loss of thickness of up to 1mm.

Interconnecting truss: The truss was in fair condition with spot areas of paint loss and surface corrosion. There was an area of loss of section to the upper east flange by the north column, 300 x 50mm. [\(photo 56\)](#)

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Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Examiner Comments on Structure condition



1. Vertical hairline fracture, 900mm in length.
2. Diagonal hairline fracture, 600mm in length.
3. Vertical hairline fracture, 1200mm in length.
4. Diagonal hairline fracture, 250mm in length.
5. Vertical hairline fracture, 900mm in length.
6. Area of loss of thickness, 1000 x 600 x up to 2mm.
7. Vertical hairline fracture, 300mm in length.
8. Vertical fracture, 2000 x 1mm. [\(photo 57\)](#)
9. Diagonal hairline fracture, 1200mm in length. [\(photo 54\)](#)
10. Diagonal hairline fracture, 900mm in length.
11. Vertical fracture, 2000 x up to 2mm. [\(photo 57\)](#)
12. Area of loss of thickness, 2000 x 200 x 1mm. [\(photo 57\)](#)
13. Vertical fracture, 1700 x 1mm. [\(photo 57\)](#)
14. Area of loss of section to upper angle, 2000 x 80mm.
15. Area of loss of section to lower angle, 3000 x 7mm.
16. Vertical fracture, 2000 x up to 2mm.
17. Vertical fracture, 2000 x 1mm.
18. Vertical fracture, 2000 x 1mm.
19. 2No. areas of seepage.
20. Area of loss of section to upper angle, 2000 x 30mm.
21. Area of loss of thickness to lower angle, 2000 x 30 x up to 7mm.
22. Area of loss of thickness to stiffener, 400 x 200 x up to 7mm. [\(photo 58\)](#)

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Examiner Comments on Structure condition

23. Area of loss of thickness, 2000 x 200 x up to 2mm.
24. Area of loss of thickness, 1000 x 1000 x up to 3mm.
25. Diagonal hairline fracture, 600mm in length.
26. Vertical fracture, 2000 x 1mm.
27. Vertical fracture, 1000 x 1mm.
28. Area of loss of thickness, 300 x 100 x up to 3mm.
29. Diagonal fracture, 900 x 1mm.
30. Area of loss of section to lower angle, 2000 x 50mm.
31. Area of loss of thickness to upper angle, 2000 x 30 x up to 6mm.
32. Area of seepage, light vegetation growth and loss of thickness, 500 x 600 x 1mm. [\(photo 59\)](#)
33. Area of paint and loss of thickness, 1500 x 1000 x up to 2mm.
34. Vertical fracture, 1000 x up to 2mm.
35. Area of loss of thickness, 1000 x 1000 x up to 2mm. [\(photo 60\)](#)
36. Area of loss of section to upper angle, 1200 x 80mm.
37. Area of loss of section to lower angle, 1000 x 70mm. [\(photo 61\)](#)
38. Diagonal hairline fracture, 400mm in length.
39. Vertical fracture, 2000 x up to 2mm. [\(photo 62\)](#)
40. Diagonal fracture, 2000 x up to 2mm. [\(photo 62\)](#)
41. Vertical hairline fracture, 600mm in length.
42. Diagonal hairline fracture, 400mm in length.

Pier 4

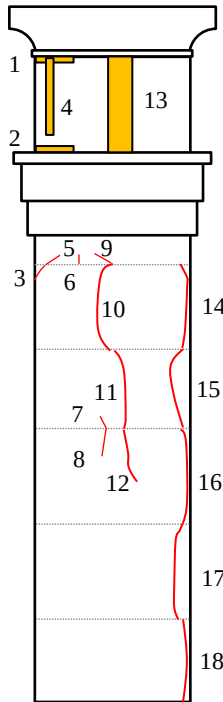
North column: There were areas of hairline map cracking to paintwork, paint loss and surface corrosion throughout, especially to panel joints. There was light rust debris to the top of the pier.

South column: [\(photo 63\)](#) There were areas of hairline map cracking to paintwork, paint loss and surface corrosion throughout, especially to panel joints.

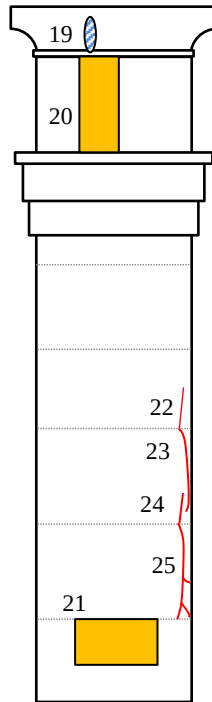
Interconnecting truss: The truss was in fair condition with spot areas of paint loss and surface corrosion. There was an area of loss of thickness to the lower east flange at the connection point to the north column, 300 x 200 x up to 4mm. [\(photo 64\)](#)

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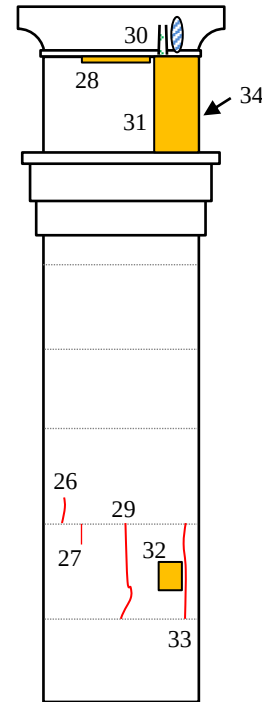
Examiner Comments on Structure condition



North column, north elevation



South column, north elevation



South column, south elevation

1. Area of loss of section to upper angle, 3000 x 80mm. [\(photo 65\)](#)
2. Area of loss of thickness to lower angle, 3000 x 80 x up to 6mm, with loss of section, 2000 x 60mm.
3. Diagonal hairline fracture, 300mm in length.
4. Area of loss of thickness, 1000 x 80 x up to 2mm.
5. Diagonal hairline fracture, 300mm in length.
6. Vertical hairline fracture, 150mm in length.
7. Diagonal hairline fracture, 300mm in length.
8. Diagonal hairline fracture, 300mm in length.
9. Diagonal hairline fracture, 400mm in length. [\(photo 66\)](#)
10. Vertical fracture, 2000 x up to 2mm. [\(photos 66 & 67\)](#)
11. Vertical fracture, 2000 x up to 2mm. [\(photo 66 & 67\)](#)
12. Vertical fracture, 1200 x 1mm.
13. Area of seepage and loss of thickness, 1500 x 300 x up to 3mm. [\(photo 68\)](#)
14. Vertical fracture, 2000 x up to 2mm. [\(photo 69\)](#)
15. Vertical fracture, 2000 x up to 2mm. [\(photo 69\)](#)
16. Vertical fracture, 2000 x up to 2mm. [\(photo 69\)](#)
17. Vertical fracture, 2000 x up to 2mm. [\(photo 69\)](#)
18. Vertical fracture, 2000 x up to 2mm. [\(photo 69\)](#)
19. Area of seepage. [\(photo 70\)](#)
20. Area of loss of thickness, 1500 x 700 x up to 2mm. [\(photo 70\)](#)
21. Area of loss of thickness, 500 x 500 x up to 2mm.
22. Diagonal hairline fracture, 1400mm in length. [\(photo 71\)](#)

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Examiner Comments on Structure condition

- 23. Vertical fracture, 1800 x up to 2mm. [\(photo 71\)](#)
- 24. Vertical fracture, 900 x up to 2mm. [\(photo 71\)](#)
- 25. Vertical branched fracture, 2000 x up to 2mm. [\(photo 72\)](#)
- 26. Vertical hairline fracture, 400mm in length.
- 27. Vertical fracture, 600 x 1mm.
- 28. Area of loss of thickness to upper angle, 4000 x 80 x up to 3mm, with loss of section 2000 x 70mm.
- 29. Vertical fracture, 2000 x 1mm.
- 30. Area of seepage and spot vegetation growth. [\(photo 73\)](#)
- 31. Area of loss of thickness, 1500 x 1000 x up to 5mm.
- 32. Area of loss of thickness, 100 x 120 x up to 2mm. [\(photo 74\)](#)
- 33. Vertical fracture, 2000 x 1mm. [\(photo 74\)](#)
- 34. Area of loss of thickness to drainpipe bracket, 80 x 30 x up to 5mm, with loss of section, 60 x 15mm. [\(photo 75\)](#)

Pier 5

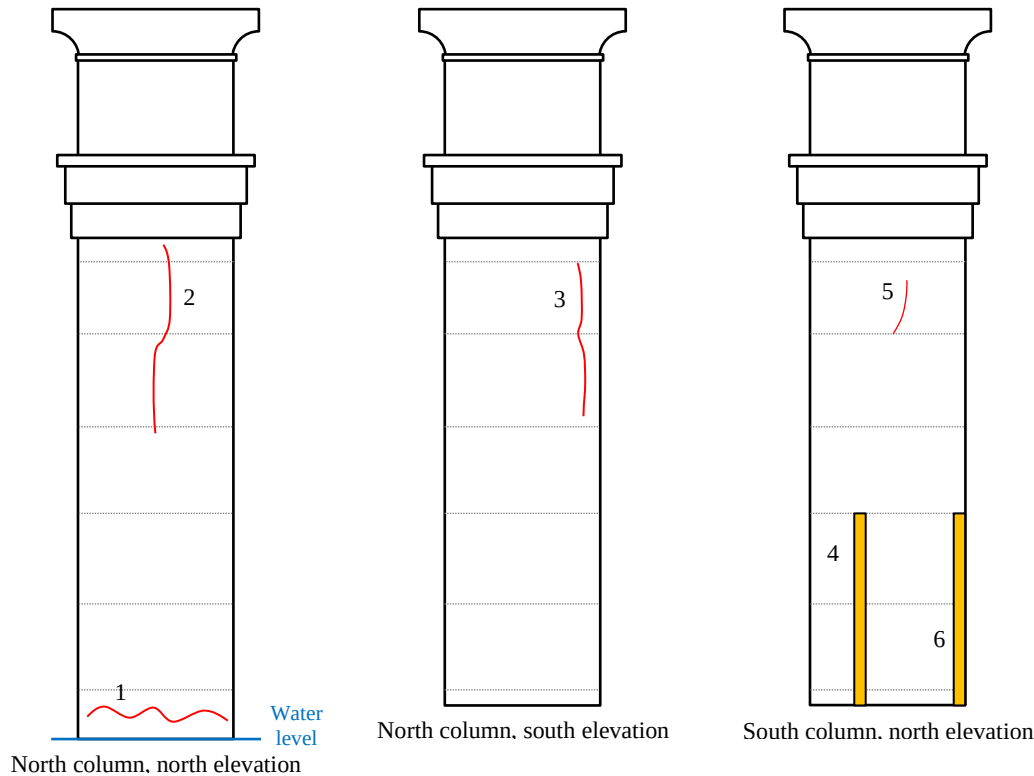
North column: [\(photo 76\)](#) There were areas of hairline map cracking to paintwork, paint loss and surface corrosion throughout, especially to panel joints.

South column: There were areas of hairline map cracking to paintwork, paint loss and surface corrosion throughout, especially to panel joints.

Interconnecting truss: [\(photo 77\)](#) The truss was in fair condition with spot areas of paint loss and surface corrosion. There were 4No. areas of loss of thickness to the web at connection points with both pier columns, each 600 x 150 x 1mm.

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Examiner Comments on Structure condition



1. Horizontal hairline fracture, 1000mm in length.
2. Vertical fracture, 5000 x up to 2mm. [\(photo 78\)](#)
3. Vertical fracture, 5000 x 1mm.
4. Area of loss of thickness, 5000 x 200 x 1mm. [\(photo 79\)](#)
5. Diagonal hairline fracture, 1200mm in length.
6. Area of loss of thickness, 5000 x 200 x 1mm.

Pier 6

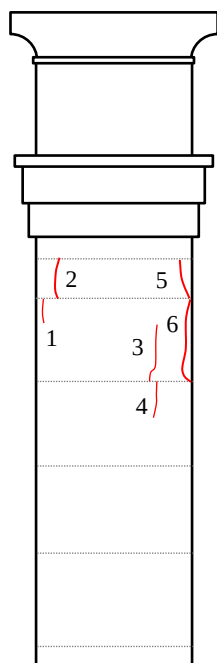
North column: [\(photo 80\)](#) There were areas of hairline map cracking to paintwork, paint loss and surface corrosion throughout, especially to panel joints.

South column: There were areas of hairline map cracking to paintwork, paint loss and surface corrosion throughout, especially to panel joints.

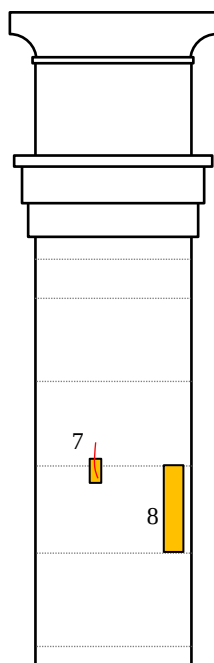
Interconnecting truss: The truss was in fair condition with spot areas of paint loss and surface corrosion. There were 2No. areas of loss of thickness, 300 x 100 x up to 4mm, with loss of section, 40 x 20mm, to the bottom flanges at each column. [\(photo 81\)](#)

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

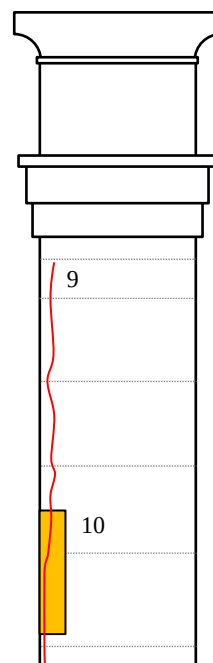
Examiner Comments on Structure condition



North column, south elevation



South column, north elevation



South column, south elevation

1. Vertical hairline fracture, 300mm in length.
2. Vertical fracture, 3000 x 1mm.
3. Vertical hairline fracture, 1200mm in length.
4. Vertical hairline fracture, 500mm in length.
5. Vertical fracture, 400 x up to 2mm.
6. Vertical fracture, 1800 x up to 2mm.
7. Vertical hairline fracture, 500mm in length, with associated area of loss of thickness, 300 x 100 x up to 2mm.
8. Area of loss of thickness, 1000 x 200 x up to 2mm.
9. Vertical fracture, 8000 x up to 2mm. [\(photo 82\)](#)
10. Area of loss of thickness, 2500 x 500 x up to 2mm. [\(photo 82\)](#)

Pier 7

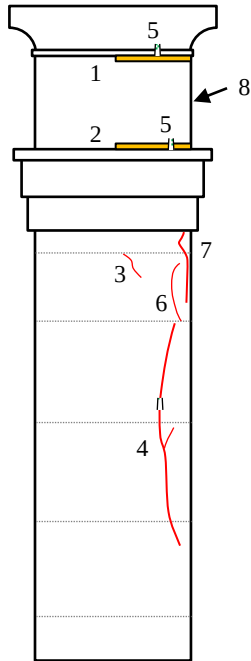
North column: There were areas of hairline map cracking to paintwork, paint loss and surface corrosion throughout, especially to panel joints. There was light, non-offensive graffiti to the base of the column.

South column: [\(photo 83\)](#) There were areas of hairline map cracking to paintwork, paint loss and surface corrosion throughout, especially to panel joints. There was light, non-offensive graffiti to the base of the column.

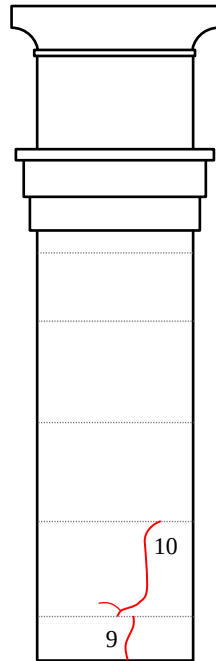
Interconnecting truss: The truss was in fair condition with spot areas of paint loss and surface corrosion. There was an area of loss of thickness to the lower west flange at the connection point with the north column, 300 x 200 x up to 8mm, with loss of section 150 x 100mm. There was an area of loss of section to the upper west flange at the connection point with the north column, 100 x 100mm. [\(photo 84\)](#) There was an area of loss of thickness to the lower west flange at the connection point with the south column, 450 x 200 x up to 3mm. There was an area of loss of section to the upper west flange at the connection point with the south column, 300 x 30mm.

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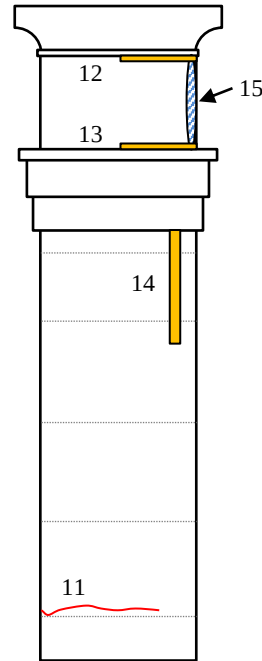
Examiner Comments on Structure condition



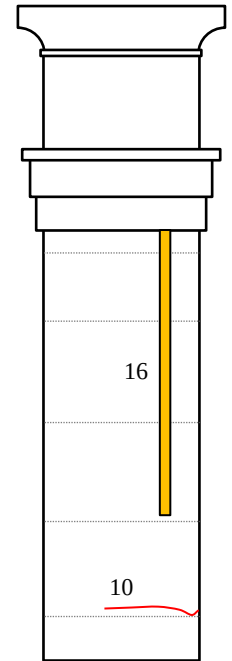
North column, north elevation



North column, south elevation



South column, north elevation



South column, south elevation

1. Area of loss of section to upper angle, 3000 x 30mm.
2. Area of loss of section to lower angle, 1000 x 30mm.
3. Diagonal hairline fracture, 800mm in length.
4. Vertical branched fracture, 4000 x up to 3mm, with associated buddleia growth. [\(photo 85\)](#)
5. 2No. spot areas of vegetation growth. [\(photo 86\)](#)
6. Vertical hairline fracture, 1800mm in length.
7. Vertical fracture, 3000 x up to 1mm.
8. 10% of packing timber to clamp / stiffener missing / loose / rotten. [\(photo 86\)](#)
9. Vertical fracture, 1000 x 1mm.
10. Vertical branched fracture, 2000 x 1mm.
11. Horizontal fracture, 4000 x up to 2mm. [\(photo 87\)](#)
12. Area of loss of section to upper angle, 3000 x 30mm.
13. Area of loss of section to lower angle, 1000 x 30mm.
14. Area of loss of thickness, 2000 x 200 x up to 2mm.
15. Area of seepage. [\(photo 88\)](#)
16. Area of loss of thickness, 5000 x 200 x up to 2mm.

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Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Examiner Comments on Structure condition

Castle Façades

The castle façades to the tops of the piers were in fair condition with spot areas of paint loss and surface corrosion throughout. **(photos 89, 90 & 91)** The south column façades were in close proximity to the adjacent Metrolink bridge and OLE. **(92)** There were spot areas of loss of thickness of up to 2mm and rust jacking of up to 15mm to the panel joints. **(photo 93)** Tie bar connections were in fair condition. **(photo 94)** There was thick debris to the tops of the pillars within the façades. **(photo 95)**

Truss Sections

There were a large number of small faults to the truss sections, and so some faults have been generalised. On the following sketches, the following symbols have been used for two of the most common faults:

- = Where the diagonal members met a loss of thickness of 5-8mm was found over a length of 30-50mm at all four points. **(photo 96)**
- = 5-20% loss of section to the edges of the diagonal braces which connect the diagonal members. This was generally over a length of 100-200mm.

General faults

There was widespread paint loss and surface corrosion throughout the trusses. Mortar located to the outside bottom flange of the lower boom was cracked, loose and often missing for the full span, on both sides. **(photo 97)**

There was paint loss, heavy corrosion/delamination and spots of loss of thickness to 6mm to the tops of the trusses. There was pitting to a maximum depth of 5mm and 25% of the rivet heads were missing with a further 35% pointed. **(photos 98)**

Abbreviations

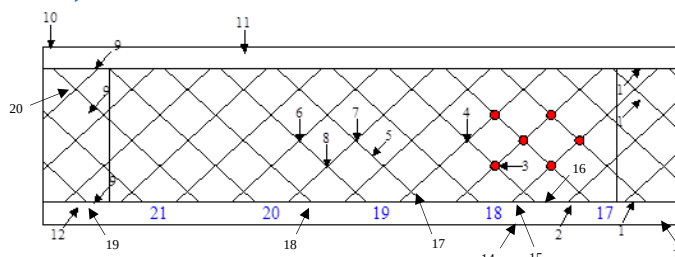
LOS – Loss of section (i.e. through the full thickness of the steel)

LOT – Loss of thickness (a depth measurement is given)

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Carrying/Over: Disused rail / Canal, rail, road & land	No. of spans: 8		

Examiner Comments on Structure condition

Span 2 North Truss (photo 99)



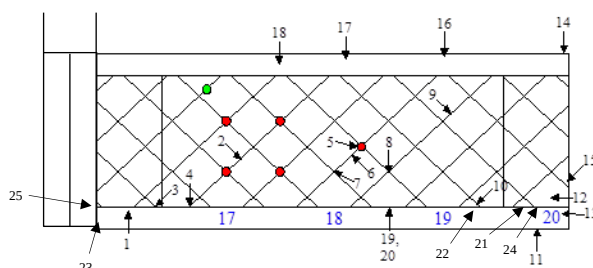
Fault ● occurred to 80% of the nodes across this section of the truss (including the areas shown).

Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
1	17	N	End plate stiffener	LOT	120 x 40 by 10mm	
2	17	N	Bottom boom	Flooding	Filled with water to brim	
3	18	N	Diagonal member	LOS	40 x 15mm	
4	18	N	Diagonal member	LOS	80 x 80mm	
5	19	N	Diagonal member	LOT	25% of top surfaces	
6	20	N	Diagonal member	LOS	90 x 12mm	
7	19	N	Diagonal member	LOS	40 x 10mm	100
8	20	N	Diagonal member	LOS	25 x 10mm	
9	21	N	End plate stiffeners	LOT	2-3mm to full element	
10	21	N	Top boom corner	Split	40 x 10mm	
11	21	N	Top plate	LOS	190mm to a knife edge	
12	21	S	Base of end plate	LOT / delamination	500 x 150 by 3mm	101
13	17	N	Bottom boom bottom flange	LOS	1000 x 50mm	
14	18	N	Bottom boom bottom flange	LOS	450 x 80mm	102
15	18	S	Bottom boom top flange	LOS	500 x 40mm	103
16	18	-	Bottom boom internal stiffener	LOS	350 x 40mm	104
17	19	N	Diagonal bracing	LOS	60 x 50mm	105
18	20	S	Bottom boom top flange	LOS	100 x 30mm	
19	21	S	Bottom boom top flange	LOS	400 x 30mm	
20	21	S	Vertical section plate	LOS	60 x 12mm	106

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Carrying/Over: Disused rail / Canal, rail, road & land	No. of spans: 8		

Examiner Comments on Structure condition

Span 2 South Truss (photo 107)



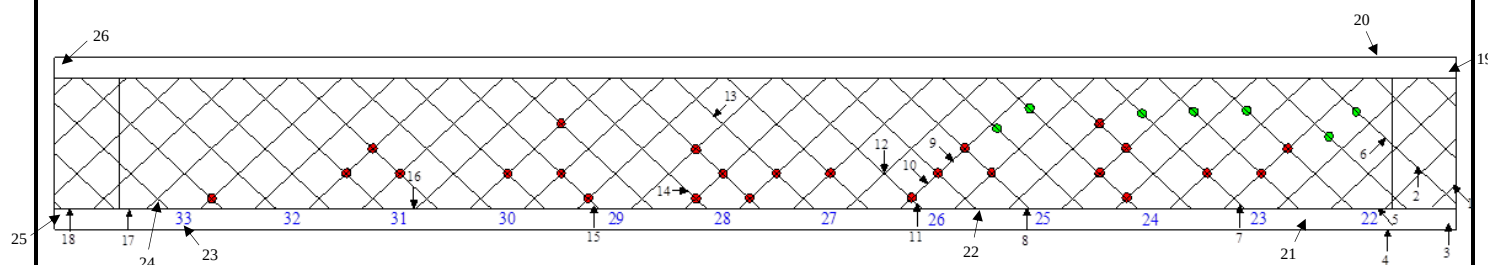
Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
1	17	N	Base of end plate	LOT / delamination	500 x 250 x 6mm	
2	17	S	Diagonal member	LOT	4500 x 70 x 2mm	
3	17	S	End beam bracing	LOS	220 x 50mm	
4	17	S	Diagonal bracing	LOT	700 x 10 x 5mm	
5	18	S	Diagonal member	LOS	35 x 15mm	
6	18	S	Diagonal member	LOS	20 x 15mm	
7	18	S	Diagonal bracing	Missing rivet		108
8	18	S	Diagonal bracing	LOS	25 x 10mm	109
9	19	S	Diagonal member, top surface	LOT	5000 x 10 x 3mm with LOS 50 x 10mm	
10	19	S	Diagonal bracing	LOS	200 x 10mm with surrounding LOT to 7mm	
11	19	S	End plate	LOT	300 x 350 x 10mm	
12	19	S	End plate	LOT	180 x 20 x 6mm	
13	19	N	Base of end plate	LOT / delamination	500 x 120 x 1mm	
14	19	N	End plate corner	Split	60 x 12mm	110
15	19	S	End plate	LOT in patches	1500 x 1500 x 5mm	
16	19	S	Top boom	LOS	800 x 50mm with surrounding to a knife edge	111
17	19	S	Top boom	LOT	1000 x 40 x 5mm	112
18	18	S	Top boom	LOT	500 x 40 x 3mm	

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Examiner Comments on Structure condition

Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
19	18	S	Bottom boom internal stiffener	LOS	100 x 20mm	113
20	18	S	Bottom boom, top flange	LOT	By 4mm	
21	Full span	-	Bottom boom	Flooding		
22	19	-	Diagonal bracing	LOS	80 x 20mm	
23	17	-	Diagonal bracing & back plate	LOT	300 x 300 by 8mm & 450 x 400 by 6mm	
24	20	S	Bottom boom, top flange	LOS	200 x 80mm	
25	17	N	Vertical section above pier	LOS	100 x 50mm, with LOT 400 x 150 by 10mm	114

Span 3 North Truss



Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
1	22	S	End plate flange	LOS	250 x 50mm	115
2	22	S	End section web	LOT	1400 x 300 by 3mm with LOS 100 x 100mm	
3	22	N	End plate flange	LOS	150 x 100mm	
4	22	N	Bottom boom, bottom flange	LOS	200 x 25mm	
5	22	S	Bottom boom, top flange	LOS	To a knife edge for 500mm	
6	22	-	Diagonal bracing	LOS	75% loss to 40mm length	

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Carrying/Over: Disused rail / Canal, rail, road & land	No. of spans: 8		

Examiner Comments on Structure condition

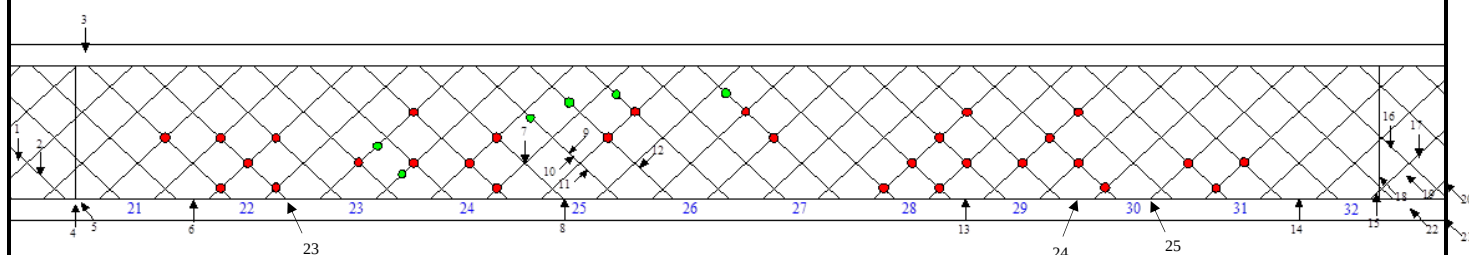
Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
7	23	-	Diagonal bracing	LOS	Lowest 3 affected, one total loss, two 50% loss	
8	25	-	Diagonal bracing	LOS – 4No.	2No. 30% loss 2No. 100% loss	
9	25	S	Diagonal member	LOT	500 x 200 by 6mm	116
10	26	N	Diagonal member	LOS	50% over 200mm length, including 50mm hole	
11	26	-	Diagonal bracing	LOS – 2No.	75%	117
12	26	S	Diagonal member	LOT	1000 x 25 by 5mm	
13	28	S	Diagonal member	LOS	15% over 2200 x 20mm	
14	28	N	Diagonal member	LOT	300 x 30 by 5mm	
15	29	S	Diagonal member	LOT	400 x 200 by 4mm	
16	31	-	Diagonal bracing	LOS	Total loss of section to brace	
17	33	S	Bottom boom, top flange	LOS	300 x 50mm	
18	33	N	Bottom boom, top flange	LOS	400 x 35mm	
19	22	S	Top boom, top flange	LOS	100 x 20mm	
20	22	S	Top boom, top flange	LOT	950 x 50 by 6mm	
21	23	-	Bottom boom, stiffener	LOS	100 x 20mm	
22	26	-	Diagonal bracing	LOS	130 x 50mm	
23	33	N	Bottom boom, bottom flange	LOS	200 x 50mm	
24	33	-	Diagonal bracing	LOS	100 x 50mm	118
25	33	-	End plate	LOT	400 x 400 by 10mm with LOS 400 x 40mm	119
26	33	-	Top boom top flange	LOT	700 x 20 by 10mm with LOS 100 x 20mm	

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Carrying/Over: Disused rail / Canal, rail, road & land	No. of spans: 8		

Examiner Comments on Structure condition

Span 3 South Truss

There were spot areas of loss of thickness of up to 5mm throughout the lower stiffeners for the diagonal members.



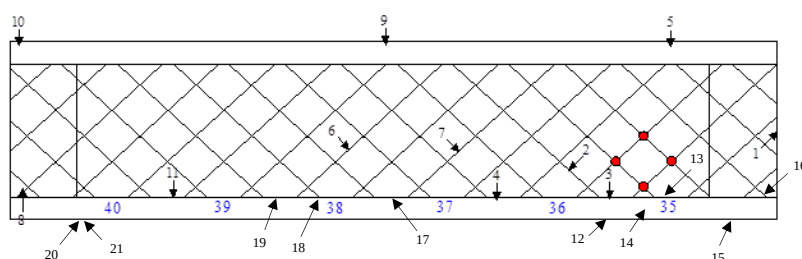
Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
1	20	N	End section, lower horizontal stiffener	LOS	320 x 35mm	
2	20	N	Web of end section	LOT	1400 x 300 by 3mm	
3	20	N	Top boom, top flange	LOS	1600 x 80mm	
4	20	S	Bottom boom, bottom flange	LOS	500 x 50mm	
5	20	N	Bottom boom, top flange	LOS	260 x 35mm	
6	21	-	Bottom boom, transverse section	LOS	Top flange to a knife edge, full length, plus 40 x 12mm	
7	24	S	Diagonal member	LOT	200 x 250 by 5mm	
8	24	N	Diagonal member	LOT	400 x 250 by 5mm	
9	25	S	Diagonal member	LOT	600 x 30 by 6mm	
10	25	N	Diagonal member	LOT	400 x 70 by 4mm	120
11	25	N	Diagonal member	LOS	120 x 200 by 5mm with 25mm hole	
12	25	N	Diagonal member	LOS	100 x 12mm	
13	28	-	Transverse member on bottom boom, top flange	LOS	90% loss to 40 x 100mm	
14	31	N	Bottom boom, top flange	LOS	600 x 60mm	121
15	32	N	Bottom boom, top flange	LOS	430 x 40mm	
16	32	N	Truss end section lower horizontal stiffener	LOS	400 x 30mm	

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Examiner Comments on Structure condition

Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
17	32	N	Truss end section web	LOT	1400 x 300 by 3mm	
18	32	N	Truss end section west vertical stiffener	LOS	150 x 15mm plus 5 rivet heads	
19	32	N	Truss end section mid vertical stiffener	LOS	200 x 20mm plus 1 rivet	
20	32	N	Truss end section end flange/plate	LOS	1050 x 100mm	
21	32	S	Truss end section end flange/plate	LOS	180 x 30mm	
22	32	S	Base of end plate	LOT / delamination	1000 x 200 by 3mm	
23	22	N	Bottom boom, top flange	LOT	500 x 100 by 8mm with LOS 40 x 40mm	
24	28	-	Bottom boom, transverse member	LOS	100 x 20mm	
25	30	-	Diagonal bracing	LOS	75 x 30mm	122

Span 4 North Truss



Fault ● occurred to 50% of the nodes across this section of the truss (including the areas shown).

Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
1	35	N	End plate upright angle	LOT	2000 x 150 by 2mm	
2	36	N	Diagonal bracing	LOT	600 x 100 by 2mm	
3	36	N	Transverse member on bottom boom	LOS	30 x 12mm, 50 x 20mm and 40 x 15mm	
4	37	N	Bottom boom, top flange	LOT	50% of surface area by 3mm – painted over	

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Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

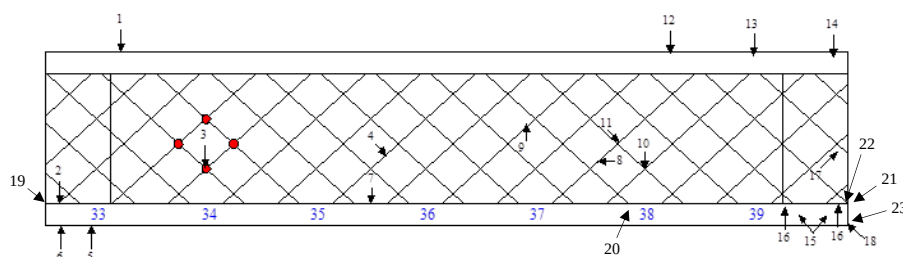
Examiner Comments on Structure condition

Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
5	35	N	Top boom, top flange	LOS	200 x 30mm	123
6	38	N	Diagonal member (top and edge)	LOS	70 x 20mm with LOT to 7mm surrounding	
7	37	N	Diagonal bracing	LOT	300 x 60 by 3mm	
8	40	N	End plate	LOT	25% of area by 2mm	
9	38	N	Top flange top boom	LOT	700 x 100 by 6mm	124
10	40	N	Corner top beam	Split	30 x 10mm	
11	40	N	Lower web of boom	LOT	60% of area by 2mm	
12	36	S	Bottom boom, bottom flange	LOS	2000 by 90mm	
13	35	-	Diagonal bracing	LOS	Totalling 150 x 50mm	125
14	35	-	Bottom boom stiffener	LOS	100 x 100mm	
15	35	N	Bottom boom, bottom flange	LOS	3000 by 100mm	
16	35	-	End plate	LOS	600 x 100mm	
17	37	-	Diagonal bracing & bottom boom, top flange	LOT	3000 x 500 by 10mm with LOS totalling 200 x 100mm	
18	38	-	Bottom boom stiffener	LOS	90 x 15mm	
19	39	S	Bottom boom, top flange	LOS	150 x 30mm	
20	40	S	Bottom boom, bottom flange	LOS	2000 by 40mm	126
21	40	N	Bottom boom, bottom flange	LOT	1500 x 30 by 3mm with LOS 300 x 70mm	

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Examiner Comments on Structure condition

Span 4 South Truss



Fault ● occurred to 35% of the nodes across this section of the truss (including the areas shown).

Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
1	33	S	Top of top boom	LOT	3600mm to a knife edge	
2	33	S	End plate stiffener	LOT	190 x 50 by 5mm	
3	34	S	Diagonal bracing	LOT – 2No.	100 x 20 by 4mm & 60 x 15 by 4mm	
4	35	S	Diagonal bracing	LOT	400 x 400 by 8mm	
5	33	S	Web stiffener	LOS	100 x 10mm	
6	33	S	Web	LOT	700 x 200 by 7mm	
7	36	S	Transverse member on bottom boom	LOT	20% of area by 2mm with LOS 50 x 40mm	
8	37	S	Diagonal member	LOT	250 x 90 by 5mm	
9	37	S	Diagonal member	Deformation and missing rivet	Bent by 12mm	127
10	38	S	Diagonal member	LOS	20 x 10mm	
11	38	S	Diagonal member	LOS	200 x 7mm	
12	38	S	Top boom	LOS – 2No.	10 x 10mm	
13	39	S	Top boom	LOS	1200 x 30mm	
14	39	N	Top boom	LOS	700 x 30mm	128
15	39	S	End plate	LOT	1000 x 200 by 6mm	
16	39	S	End plate stiffener	LOT	600 x 70 x 1mm	
17	39	S	End plate upright	LOT	3000 x 200 x 1mm	
18	39	S	End plate bottom	LOS	200 x 8mm to a knife edge	129
19	33	-	End plate	LOS	150 x 40mm	
20	38	S	Diagonal bracing & bottom boom, top flange	LOS – 2No.	20 x 20mm & 40 x 30mm	

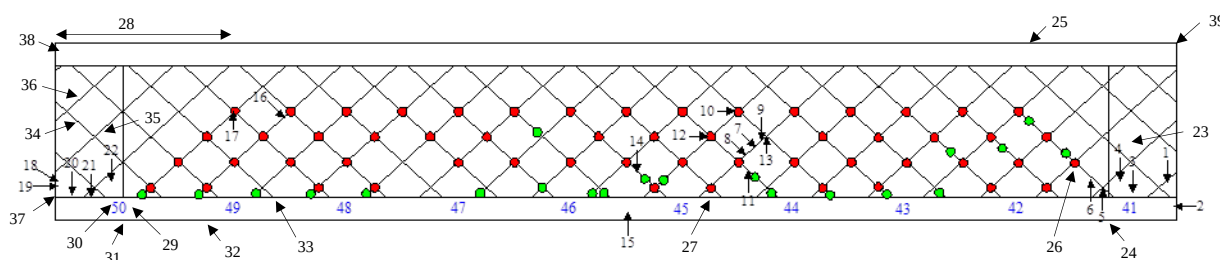
ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
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Examiner Comments on Structure condition

Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
21	39	N	Bottom boom, top flange	LOT	600 x 90 by 8mm with LOS 300 x 900mm	130
22	39	N	Bottom boom, bottom flange	LOS	1000 x 50mm	
23	39	S	Vertical section above pier	Missing rivets	3No.	

Span 5 North Truss (photo 131)

There were minor areas of pooling throughout the bottom boom. There was loss of thickness of 1mm throughout bottom boom stiffeners with spiking to lower flange rivets. (photo 132)



Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
1	41	N	End beam	LOT	500 x 200 by 3mm	
2	41	N	End beam	LOT	700 x 100 by 2mm	133
3	41	N	End beam	LOT	500 x 200 by 4mm	
4	41	N	End beam	LOT	200 x 100 by 3mm	
5	41	N	End beam joining Diagonal member	LOT	300 x 200 x 1mm	
6	41	N	Diagonal bracing	LOS	90 x 20mm	
7	44	N	Diagonal bracing	LOT	100 x 80 by 6mm	
8	44	N	Diagonal bracing	LOT	90 x 60 by 4mm	
9	44	S & N	Diagonal member	LOS – 2No.	80 x 30mm	
10	44	S	Diagonal member	LOS	100 x 40mm	
11	44	N	Diagonal bracing	LOT	200 x 80 by 8mm	
12	44	S	Diagonal member	LOS	170 x 40mm	134
13	44	N	Diagonal member	LOT	1000 x 70 by 6mm	
14	45	N	Diagonal bracing	LOS	140 x 60mm	
15	45	N	Transverse member on bottom boom	LOS	200 x 20mm	
16	49	N	Diagonal bracing	LOT	200 x 100 by 4mm	135

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Name: Castlefield Viaduct	Type: Viaduct		
Carrying/Over: Disused rail / Canal, rail, road & land	No. of spans: 8		

Examiner Comments on Structure condition

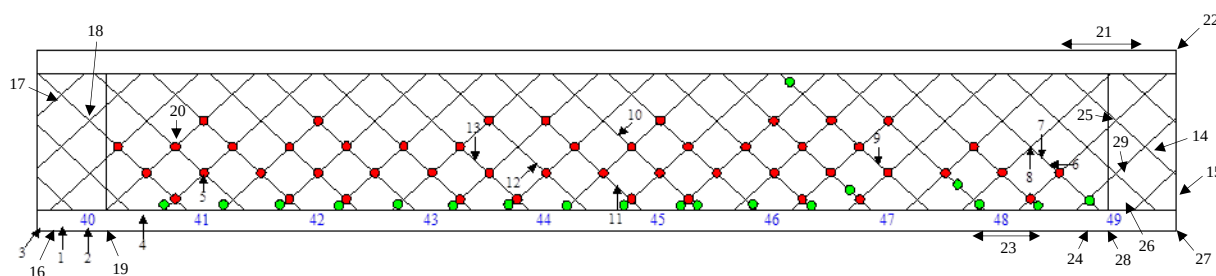
Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
17	49	S	Diagonal member	Missing rivet	With rust jacking to 30mm	
18	50	N	End beam	LOS	50 x 50mm	
19	50	N	End beam	LOT	150 x 90 by 8mm	
20	50	N	End beam	LOT	750 x 300 x 1mm	
21	50	N	End beam	LOT	750 x 250 by 1mm	
22	50	N	End beam	LOT	750 x 90 x 1mm	
23	41	N	End beam stiffener	LOT	400 x 250 by 2mm	
24	41	N	Bottom boom, bottom flange	LOS	150 x 60mm	
25	41-50	-	Top boom, top flange	LOT	Full span x 800 x 1mm	
26	41	S	Diagonal member	Rust jacking	To 30mm between members	136
27	45	S	Diagonal bracing	LOS	60 x 40mm	
28	49-51	S	Top boom, top flange	LOT	4000 x 100 by 5mm with 3No. areas of knife edging, each 150mm	137
29	50	N	End beam	Vegetation	500 x 500mm	
30	50	N	Bottom boom, bottom flange	LOS	300 x 80mm	138
31	50	S	Bottom boom, bottom flange	LOS	400 x 70mm	
32	49-50	N	Bottom boom, bottom flange	LOS	1500 x 30mm	
33	49	S	Deck	Vegetation	2000 x 400mm	
34	51	N	End beam	LOS	500 x 20mm	
35	50	N	End beam stiffener	LOS	400 x 40mm	
36	51	N	End beam stiffener	LOS	150 x 50mm	
37	51	S	End beam stiffener	LOS	45 x 40mm	
38	51	S	End beam	Rust jacking	300 x 15 by 20mm	
39	41	S	End beam	Rust jacking	250 x 15 by 10mm	

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton	OS ref: SJ 830 976		
Name: Castlefield Viaduct	Type: Viaduct		
Carrying/Over: Disused rail / Canal, rail, road & land	No. of spans: 8		

Examiner Comments on Structure condition

Span 5 South Truss (photo 139)

There was pooling with debris build-up throughout the bottom boom. (photo 140) There was loss of thickness to 1mm throughout the top flange of the top boom. There was loss of thickness of up to 2mm throughout bottom boom stiffeners with spiking to lower flange rivets.



Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
1	40	S	End beam	LOT	850 x 170 by 2mm	
2	40	S	End beam	LOT	850 x 170 by 2mm	
3	40	S	End beam	LOT	140 x 140 x 9mm to a knife edge	
4	40	S	Transverse member on bottom boom	LOS	50 x 25mm	
5	41	S	Diagonal bracing	LOT	250 x 80 by 3mm	
6	48	S	Diagonal bracing	LOT	1000 x 80 by 6mm	
7	48	N	Diagonal bracing	LOT	900 x 80 by 6mm	
8	48	N	Diagonal bracing	LOT	200 x 80 by 3mm	
9	47	S	Diagonal bracing	LOT	400 x 100 by 3mm	
10	44	N	Diagonal bracing	LOT	2000 x 80 by 7mm	
11	44	N	Diagonal bracing	LOT	400 x 80 by 9mm	
12	45	N	Diagonal bracing	LOT	250 x 80 by 4mm	
13	43	S	Diagonal bracing	LOS & LOT	50 x 50mm & 3000 x 80 by 9mm	141
14	49	N	Web stiffener	LOT	600 x 60mm up to 3mm with knife edging for 60mm	
15	49	N	End plate	LOS LOT	100 x 50mm & 300 x 150mm to a knife edge	
16	40	S	End beam void	Sapling growth	1500 x 1500mm	142
17	40	S	End beam stiffener	LOS	120 x 30mm	
18	40	S	End beam stiffener	LOS	120 x 20mm	

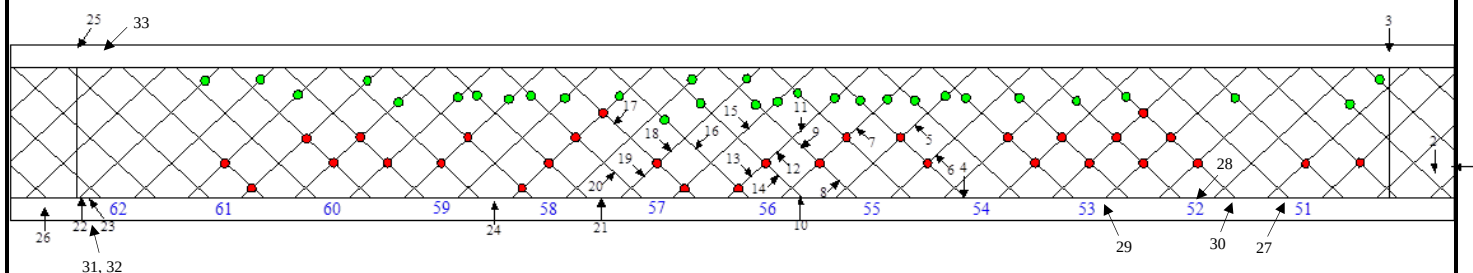
ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Examiner Comments on Structure condition

Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
19	40	S	Bottom boom, bottom flange	LOS	200 x 20mm	
20	41	N	Diagonal member	LOT	250 x 250 by 8mm with rust jacking to 5mm	143
21	49	N	Top boom, top flange	LOT	1000 x 80 by 3mm	
22	49	N	End beam	Rust jacking	250 x 15 by 10mm	
23	48	S	Bottom boom	Debris build-up between truss and adjacent structure over towpath	3000 x 400 x 200mm	144
24	49	S	Bottom boom	Surface corrosion to service fixings	To ends of bolts	
25	49	S	End beam stiffeners	LOT	200 x 50 by 2mm	
26	49	S	End beam stiffeners	LOT	1800 x 100 by 3mm	145
27	49	S	End beam	LOS	100 x 80mm	
28	49	S	Bottom boom, bottom flange	LOS	600 x 30mm	
29	49	N	End beam	LOS	350 x 60mm	

Span 6 North Truss

There were spot areas of loss of thickness and loss of section around the transverse beam connections to the top flange of the bottom boom on both sides. The bottom boom trough had debris and light vegetation growth throughout.



ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton	OS ref: SJ 830 976		
Name: Castlefield Viaduct	Type: Viaduct		
Carrying/Over: Disused rail / Canal, rail, road & land	No. of spans: 8		

Examiner Comments on Structure condition

Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
1	51	S	End of truss flange	LOS	100 x 20mm	
2	51	S	End of truss lowest horizontal stiffener	LOS	500 x 10mm	
3	51	S	Top boom top flange	LOT	600 x 100 by 8mm	
4	54	-	Diagonal bracing	LOS	90% loss	
5	54	S	Diagonal member	LOS LOT	4 holes, 20mm diameter 2400 x 50 by 7mm	
6	54	N	Diagonal member	LOT	500 x 30mm by 6mm	
7	55	S	Diagonal member	LOT LOS - 4No.	1800 x 70 by 4mm 20 x 10mm, 10 x 10mm, 70 x 55mm & 150 x 55mm	146
8	55	N	Diagonal member	LOT	600 x 25 by 6mm	
9	55	S	Diagonal member	LOT	700 x 30 by 5mm	
10	55	N	Diagonal member	LOS	160 x 50mm	
11	55	S	Diagonal member	LOT	270 x 40 by 9mm	
12	55	S	Diagonal member	LOT LOS – 2No.	1200 x 40 by 6mm 50 x 30mm & 50 x 20mm	
13	56	N	Diagonal member	LOT LOS	1500 x 30 by 5mm 60 x 25mm	
14	56	N & S	Diagonal member	LOT	300 x 30 by 6mm	
15	56	S	Diagonal member	LOT LOS – 4No.	4000 x 30 by 5mm 4No. 20mm diameter holes	
16	56	N & S	Diagonal member	LOT	2000 x 25 by 5mm (north) 3200 x 25 by 7mm (south)	
17	57	N & S	Diagonal member	LOT LOS – 4No.	2400 x 25 by 7mm (north) 3500 x 30 by 7mm (south) 50 x 40mm, 30 x 40mm, 10 x 20mm & 10 x 10mm	147
18	57	S	Diagonal member	LOT LOS	1300 x 25 by 7mm 25 x 10mm	

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton	OS ref: SJ 830 976		
Name: Castlefield Viaduct	Type: Viaduct		
Carrying/Over: Disused rail / Canal, rail, road & land	No. of spans: 8		

Examiner Comments on Structure condition

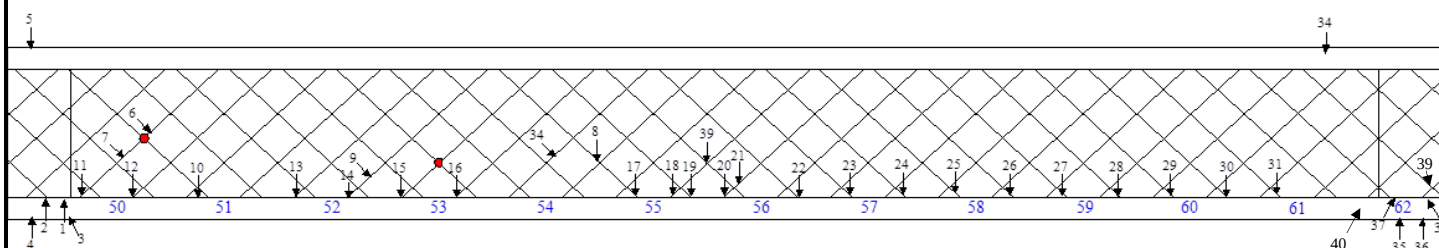
Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
19	57	N	Diagonal member	LOT LOS	800 x 30 by 7mm 30 x 20mm	
20	57	N & S	Diagonal member	LOT	2200 x 30 by 6mm (north) 1300 x 30 by 6mm (south)	
21	57	-	Transverse member on bottom boom	LOS	80 x 40mm	
22	62	N	Bottom boom, upper flange	LOS	280 x 35mm	
23	62	S	Bottom boom, upper flange	LOS – 2No.	65 x 50mm 400 x 25mm	
24	58	-	Transverse member within bottom boom	LOS	30 x 25mm & 30 x 15mm	148
25	62	S	Top flange of top boom	Section cut out	150 x 80mm	
26	62	S	Base of end plate	LOT / delamination	1800 x 300 by 1mm	
27	51	S	Bottom boom, top flange	LOS	700 x 60mm	
28	52	S	Bottom boom, top flange	LOS	500 x 40mm	
29	53	N & S	Bottom boom, top flange	LOS	400 x 30mm (north) 500 x 20mm (south)	
30	52	N	Bottom boom, top flange	LOS	20 x 20mm	
31	62	N	Bottom boom, bottom flange	LOS	200 x 40mm	
32	62	S	Bottom boom, bottom flange	LOS – 2No.	900 x 100mm & 120 x 30mm	
33	62	S	Top boom, top flange	2No. holes	Each 12 x 12mm	

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton	OS ref: SJ 830 976		
Name: Castlefield Viaduct	Type: Viaduct		
Carrying/Over: Disused rail / Canal, rail, road & land	No. of spans: 8		

Examiner Comments on Structure condition

Span 6 South Truss

There was flooding throughout the trough of the bottom boom. (photo 149) Previously reported defects to the lowest diagonal bracings could not be verified as they were below the water level, these have been left in the table below for reference but marked in red.



Fault ● occurred to 70% of the nodes across this section of the truss (including the areas shown).

Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
1	50	S	End plate stiffener	LOS	500 x 50mm	150
2	50	S	End plate stiffener	LOT	350 x 100 by 4mm	
3	50	S	End plate	LOS	50 x 20mm	
4	50	S	End plate	LOT	700 x 200 by 3mm	
5	50	S	Top of top boom	LOT	300 x 100 by 4mm	
6	50	S	Diagonal member	LOT	5000 x 150 by 3mm	
7	56	S	Diagonal member	LOT	50 x 50 by 6mm	
8	54	S	Top surface of Diagonal member	LOS	12 x 10mm	
9	52	S	Diagonal member	LOT	2500 x 150 by 2mm	
10	51	S	Bottom boom, top flange	LOT	60% of area to 2mm	
11	50	S	Diagonal bracing (lowest)	LOS	400 x 50mm	
12	50	S	Diagonal bracing (lowest)	LOS	410 x 50mm	
13	52	S	Diagonal bracing (lowest)	LOT	400 x 50 by 8mm	
14	52	S	Diagonal bracing (lowest)	LOT	500 x 10 by 9mm	
15	53	S	Diagonal bracing (lowest)	LOT	500 x 10 by 9mm	
16	53	S	Diagonal bracing (lowest)	LOS	300 x 50mm	
17	55	S	Diagonal bracing (lowest)	LOS	250 x 30mm	

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton	OS ref: SJ 830 976		
Name: Castlefield Viaduct	Type: Viaduct		
Carrying/Over: Disused rail / Canal, rail, road & land	No. of spans: 8		

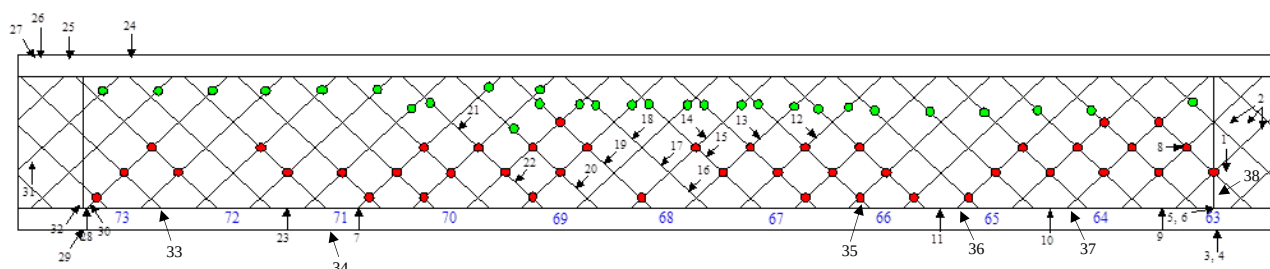
Examiner Comments on Structure condition

Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
18	55	S	Diagonal bracing (lowest)	LOS	400 x 40mm	
19	55	S	Diagonal bracing (lowest)	Missing		
20	56	S	Diagonal bracing (lowest)	LOT	400 x 10 by 5mm	
21	56	S	Diagonal bracing (lowest)	LOT	300 x 10 by 3mm	
22	56	S	Diagonal bracing (lowest)	Missing		
23	57	S	Diagonal bracing (lowest)	Missing		
24	57	S	Diagonal bracing (lowest)	LOS	200 x 40mm	
25	58	S	Diagonal bracing (lowest)	LOS	Missing	
26	58	S	Diagonal bracing (lowest)	LOS	400 x 40mm	
27	59	S	Diagonal bracing (lowest)	LOS	300 x 40mm	
28	59	S	Diagonal bracing (lowest)	LOS	350 x 40mm	
29	60	S	Diagonal bracing (lowest)	Missing		
30	60	S	Diagonal bracing (lowest)	LOS	350 x 20mm	
31	61	S	Diagonal bracing (lowest)	LOS	400 x 50mm	
32	61	S	Diagonal bracing (lowest)	LOT	400 x 10 by 6mm	
33	54	S	Diagonal bracing	LOT	30% of area to 2mm	
34	61	S	Top plate top beam	LOT	2000 x 100 by 6mm	
35	62	S	End plate upright	LOT	700 x 70 by 1mm	
36	62	S	End plate upright	LOT	700 x 150 by 1mm	
37	62	S	End plate stiffener	LOT LOS	400 x 100 by 2mm 150 x 40mm	
38	62	S	End plate stiffener	LOT	420 x 100 by 3mm	
39	56	S	Diagonal member	LOS	50 x 30mm	
40	62	N	Bottom boom, bottom flange	LOS – 2No.	1000 x 90mm & 600 x 60mm	151

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976 
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Examiner Comments on Structure condition

Span 7 North Truss



Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
1	63	S	End section, lower horizontal stiffener	LOT	100 x 70 by 9mm to a knife edge	152
2	63	N	End section upper horizontal stiffener	LOS – 3No.	150 x 40mm, 250 x 70mm & 180 x 70mm	153
3	63	N	Bottom boom, bottom flange	LOS	30% over 700 x 200mm	
4	63	S	Bottom boom, bottom flange	LOS	1200 x 80mm	154
5	63	S	Bottom boom, top flange	LOS	500 x 70mm	154
6	63	N	Bottom boom, top flange	LOS	40 x 50mm	
7	70	-	Diagonal bracing	4No. braces buckled	2No. by 20mm 2No. by 40mm	
8	63	S	Diagonal member	LOT	100 x 100 by 4mm	
9	63	-	Transverse member on bottom boom	LOS	40 x 40mm with knife edging	
10	64	-	Transverse member on bottom boom	LOS	100 x 40mm, 40 x 12mm & 60 x 12mm	
11	65	-	Transverse member on bottom boom	LOS	30 x 30mm	
12	67	N & S	Diagonal member	LOT LOS	1200 x 30 by 6mm (north) & 200 x 30 by 6mm (south) 90 x 40mm	155

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton	OS ref: SJ 830 976		
Name: Castlefield Viaduct	Type: Viaduct		
Carrying/Over: Disused rail / Canal, rail, road & land	No. of spans: 8		

Examiner Comments on Structure condition

Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
13	67	N & S	Diagonal member	LOT	400 x 30 by 6mm	
14	68	N & S	Diagonal member	LOT	400 x 30 by 6mm	
15	67	N & S	Diagonal member	LOT	1300 x 30 by 5mm (north) & 2400 x 40 by 6mm (south)	
16	67	N	Diagonal member	LOS	40 x 40mm	
17	67	N	Diagonal member	LOT	1000 x 30 by 5mm	
18	67	S	Diagonal member	LOS LOT – 3No.	30 x 40mm 400 x 30 by 6mm	
19	68	N & S	Diagonal member	LOT	2000 x 30 by 3mm (north) & 4000 x 30 by 6mm (south)	
20	68	N & S	Diagonal member	LOT	400 x 30 by 6mm	
21	69	N	Diagonal member	LOT – 2No.	1000 x 30 by 5mm	
22	69	S	Diagonal member	LOT LOS – 2No.	4000 x 30 by 6mm 20 x 25mm & 70 x 35mm	
23	71	-	Transverse member on bottom boom, upper flange	LOS	30 x 20mm to a knife edge	
24	73	N	Top boom, top flange	LOS	200 x 45mm	
25	73	N	Top boom, top flange	LOS	800 x 25mm	
26	73	N	Top boom, top flange	LOS	950 x 50mm	
27	73	S	Top boom, top flange	LOS	1600 x 60mm to a knife edge	
28	73	N & S	Bottom boom, top flange	LOS	60 x 40mm (north) 500 x 40mm (south)	
29	73	N & S	Bottom boom, bottom flange	LOS	100 x 60mm (north) 300 x 60mm (south)	
30	73	N & S	Diagonal member	LOS	250 x 60mm (north & south)	
31	73	N	End section lowest horizontal stiffener	LOT	250 x 70 by 5mm	
32	73	-	Lowest diagonal bracing	Missing		
33	73	-	Bottom boom	Concrete	1000 x 600 x 100mm	156
34	71	-	Bottom boom	Vegetation		156
35	66	-	Diagonal bracing	LOS	90 x 40mm	

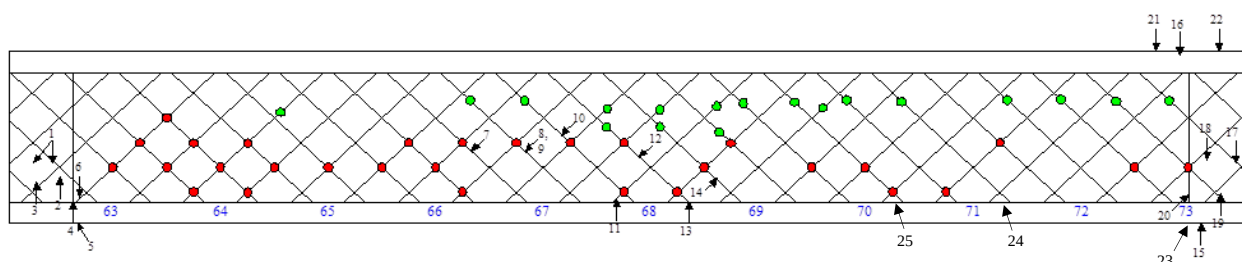
ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Examiner Comments on Structure condition

Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
36	65		Bottom boom stiffener	LOS	50 x 50mm	
37	64		Bottom boom stiffener	LOS	Totalling 120 x 120mm	
38	63		End plate vertical flange, transverse connection point	LOS	900 x 60mm	

Span 7 South Truss

There were areas of loss of thickness to the bottom boom top flanges at the connections with the main transverse girders throughout, typically 2000 x 500 x up to 10mm. (photo 157)



Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
1	62	N	End section lowest horizontal stiffener	LOS – 2No.	400 x 40mm to knife edge & 200 x 40mm to knife edge	
2	62	N	End section web	LOT	1400 x 200 by 2mm	
3	62	N	End section middle vertical stiffener	LOS	100 x 10mm	158
4	62	N	Bottom boom, upper flange	LOS	270 x 30mm	
5	62	S	Bottom boom, lower flange	LOS	300 x 15mm	
6	General	-	Diagonal bracing	LOS	The lowest brace had 90% loss of section	
7	67	N	Diagonal member	LOT	400 x 25 by 3mm	
8	67	S	Diagonal member	LOT LOS	350 x 30 by 5mm 30 x 40mm	159
9	67	N	Diagonal member	LOT LOS	700 x 30 by 5mm 70 x 30mm	159
10	67	N	Diagonal member	LOT LOS	300 x 30 by 6mm 50 x 30mm	

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Examiner Comments on Structure condition

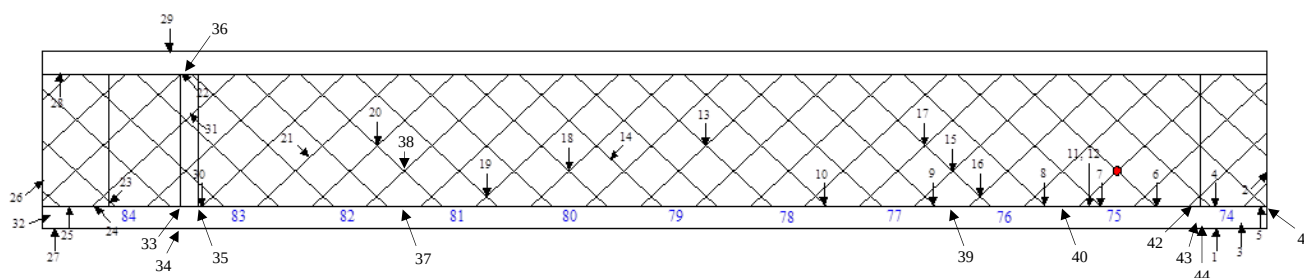
Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
11	67	S	Diagonal member	LOT	400 x 70 by 3mm	
12	68	N	Diagonal member	LOT	300 x 25 by 5mm	
13	68	S	Diagonal member	LOS	40 x 50mm	
14	68	N	Diagonal member	LOT – 2No.	300 x 40 by 6mm 20 x 70 by 6mm	
15	73	S	Bottom boom, lower flange	LOS	2000 x 80mm	160
16	73	S	Top boom, top flange	LOS	1500mm length to a maximum width of 75mm	
17	73	N	End section lowest horizontal stiffener	LOT LOS	450 by 5mm 290 x 50mm	161
18	73	N	End section web	LOT	1400 x 270 by 2mm	
19	73	N	End section vertical stiffener	LOS	100 x 10mm plus 2 rivets	
20	73	N	End section vertical stiffener	LOS	150 x 10mm plus 3 rivets	
21	73	N	Top boom, top flange	LOS	450 x 90mm	
22	73	N	Top boom, top flange	LOS	1600 x 40mm	
23	73	N	Bottom boom, bottom flange	LOS	500 x 80mm	
24	71	-	Bottom boom	Vegetation		162
25	70	-	Diagonal bracing	LOS	250 x 40mm	

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton	OS ref: SJ 830 976		
Name: Castlefield Viaduct	Type: Viaduct		
Carrying/Over: Disused rail / Canal, rail, road & land	No. of spans: 8		

Examiner Comments on Structure condition

Span 8 North Truss

There was flooding throughout the trough of the bottom boom. Previously reported defects to the lowest diagonal bracings could not be verified as they were below the water level, these have been left in the table below for reference but marked in red.



Fault ● occurred to 25% of the nodes across this section of the truss (including the areas shown).

Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
1	74	N	End plate upright	LOT	450mm to 1mm	
2	74	N	End plate inner web	LOT	1000 x 80 by 1mm	
3	74	N	End plate inner	LOT	2300 x 40 by 2mm	
4	74	N	Lowest stiffener on diagonal	LOS	200 x 50mm	
5	74	N	End plate stiffener	LOT	20 x 50 by 4mm	
6	75	N	Lowest stiffener on diagonal	LOT	200 by 1mm	
7	75	N	Lowest stiffener on diagonal	LOT / delamination	400 by 2mm	
8	75	N	Lowest stiffener on diagonal	LOT	400 by 2mm	
9	75	N	Lowest stiffener on diagonal	LOS	40 x 10mm	
10	75	N	Lowest stiffener on diagonal	LOT	400 x 2mm	
11	75	N	Top flange of bottom boom	LOT	50% of area by 2mm	
12	75	N	Top of bottom boom transverse	LOT	40% of area by 2mm	
13	79	N	Diagonal member	LOS	7 x 7mm	
14	80	N	Diagonal member	LOT	3500 by 4mm	
15	77	N	Diagonal bracing	LOS	250 x 20mm	163
16	76	N	Diagonal bracing	LOS	30 x 12mm	
17	77	N	Diagonal bracing	LOS	20 x 10mm	
18	80	N	Diagonal member	LOS	20 x 15mm	

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton	OS ref: SJ 830 976		
Name: Castlefield Viaduct	Type: Viaduct		
Carrying/Over: Disused rail / Canal, rail, road & land	No. of spans: 8		

Examiner Comments on Structure condition

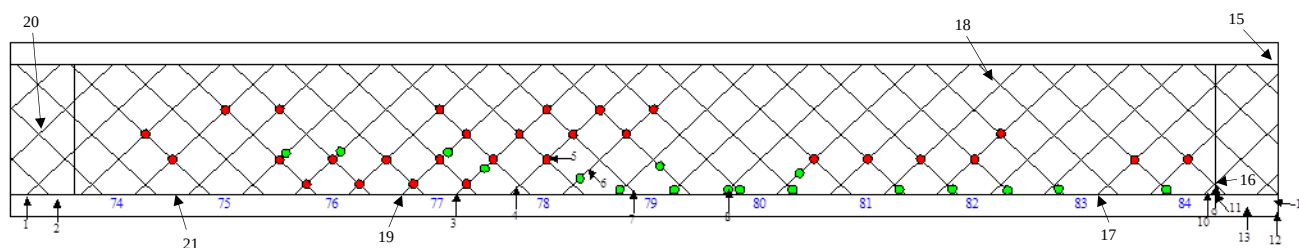
Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
19	81	N	Diagonal member	LOS	12 x 10mm	
20	82	N	Diagonal bracing	LOS – 2No.	20 x 10	
21	82	N	Diagonal member	LOT	60% of area by 2mm	
22	83	N	Vertical beam stiffener	LOT	350 by 1mm	
23	84	N	Diagonal bracing	LOT	400 x 10 by 1mm	
24	84	N	End plate stiffener	LOT	120 by 5mm	
25	84	N	End plate stiffener	LOT	200 by 5mm	
26	84	N	End plate	LOT	5% of area by 5mm	
27	84	N	End plate	LOT	400 x 100 by 5mm	
28	84	N	End plate stiffeners	LOT	400 x 100 by 3mm	
29	84	N	Top boom, top flange	LOT	1000 x 200 by 10mm	
30	83	N	Diagonal member	LOS	30 x 10mm	
31	83	N	Vertical beam	LOT	5% of area by 2mm	
32	83	S	End plate base	LOT	1000 x 500 by 4mm	
33	84	S	Bottom boom, top flange	LOS	900 x 40mm	
34	84	S	Bottom boom, bottom flange	LOS	900 x 80mm	
35	83	N	Bottom boom, top flange	LOS	200 x 50mm	
36	83	S	Top boom, horizontal plate	LOS	180 x 70mm	
37	82	-	Bottom boom, stiffener	LOS	100 x 10mm	
38	82	-	Diagonal bracing	Missing rivet		164
39	77	S	Bottom boom stiffener	LOS	100 x 10mm	
40	76	-	Bottom boom	Vegetation		165
41	74	S	Ballast plate	Deformed & detached		166
42	74	S	Bottom boom, top flange	LOS	900 x 6mm	
43	74	S	Bottom boom, bottom flange	LOS	900 x 35mm	
44	74	N	Bottom boom, bottom flange	LOS	400 x 30mm	

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton	OS ref: SJ 830 976		
Name: Castlefield Viaduct	Type: Viaduct		
Carrying/Over: Disused rail / Canal, rail, road & land	No. of spans: 8		

Examiner Comments on Structure condition

Span 8 South Truss

There was flooding throughout the trough of the bottom boom. **(photo 167)** Previously reported defects to the lowest diagonal bracings could not be verified as they were below the water level, these have been left in the table below for reference but marked in red.



Fault number	Nearest transverse	Side (N/S)	Element	Fault type	Fault dimensions	Photo
1	74	N	Lower web stiffener	LOT & LOS	500 x 30mm to knife edge & 60 x 30mm	168
2	74	N	Bottom web	LOT / delamination	1700 x 300 by 2mm	
3	76	S	Diagonal bracing	LOT	150 x 70 by 7mm	
4	77	S	Diagonal bracing	LOT	1550 x 80 by 7mm	
5	78	S	Diagonal member	LOT	100 x 60 by 5mm	
6	78	S	Diagonal bracing	LOT	1000 x 80 by 6mm	
7	78	S	Diagonal bracing	LOT	900 x 60 by 7mm	
8	79	S	Diagonal bracing	LOT	2000 x 80 by 8mm	
9	84	S	Diagonal bracing	LOT	800 x 80 by 4mm	
10	84	S	Diagonal bracing	LOT	200 x 30 by 6mm	
11	84	N	End beam	LOT	150 x 20 by 6mm	
12	84	N	End beam	LOT	90 x 30 by 9mm	
13	84	N	End beam middle upright	LOT and LOS	400 x 70 by 3mm and 90 x 5mm	
14	84	N	Web base	LOT / delamination	1700 x 350 by 3mm	
15	84	S	Back plate	2No. holes	Each 20 x 20mm	
16	84	-	End plate	Missing rivet		169
17	83	-	Bottom boom	Vegetation	Sapling growth	170
18	82	-	Diagonal bracing	Scaffold boards – not fixed		171
19	77	-	Bottom boom stiffener	LOS	100 x 30mm	172
20	74	N	End plate horizontal stiffener	LOS	120 x 60mm	
21	75	-	Bottom boom stiffener	LOS	60 x 30mm	

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Upper Transverse Steelworks

The general condition of the upper transverse steelworks was as follows:

- 50-60% paint loss/surface corrosion with pitting to 1-2mm across the tops of the steelwork. **(photo 173)**
- Spot patches of corrosion to the web to <15% of the surfaces with pitting to 1-2mm. **(photo 174)**
- 50% paint loss/surface corrosion with pitting to 1-2mm to the undersides of the steelwork.
- 5% paint loss to stiffeners.
- 35% loss of section/thickness to lower flanges, with missing rivets.
- Loss of thickness to web angles of bottom flanges averaging 2000 x 60 x up to 5mm. **(photo 175)**

Three areas of loss of section were noted:

- Lower flange of T1, north end, multiple areas of loss of section averaging 500 x 80mm. **(photo 176)**
- Lower flange of T2, north end, 25 x 25mm.
- T21 mid element, 70 x 30mm. **(photo 177)**
- Upper flange / back plate of T27, north end, 30 x 10mm. **(photo 178)**

Soffits

Abbreviations

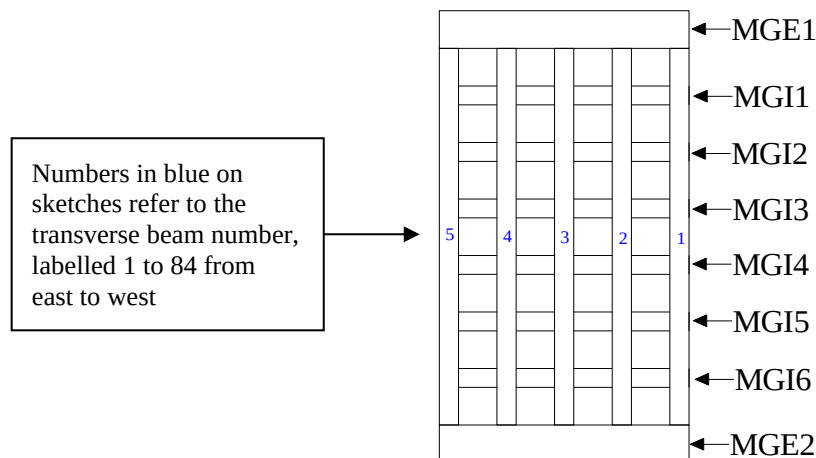
MGE – Main girder external, i.e. the outer main longitudinal girders

MGI – Main girder internal, i.e. the inner main longitudinal girders

T1 – Transverse girder 1

Labelling of elements

The longitudinal girders have been labelled as follows:



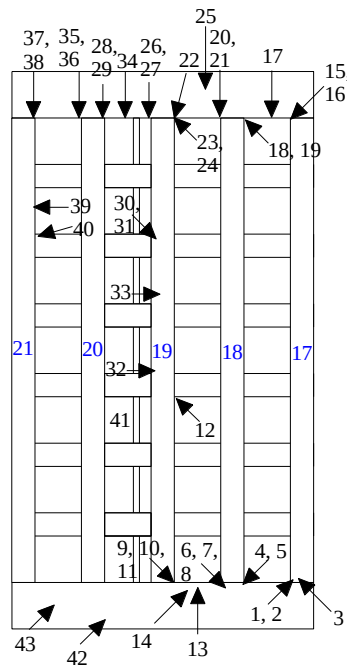
NB: Where areas of loss of thickness have been recorded, the thickness measurement given was the maximum loss of thickness for that area.

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Span 2 Soffit

Main and transverse girders had spot areas of paint loss and surface corrosion throughout. The transverse connections to the MGEs had loss of thickness to an average of 6mm. **(photo 179)** A new gutter system had been installed since the previous detailed examination. **(photo 180)**



1. There was 7mm loss of thickness over 400 x 200mm of the top flange at the transverse end. There were five rivets missing.
2. There was 6mm loss of thickness to the end 300 x 400mm of the bottom flange of the MGE.
3. There was 6mm loss of thickness on the bottom of the inner lower flange over 500 x 200mm.
4. There was 7mm loss of thickness on the top flange of the transverse end over 220 x 200mm. There were six rivets missing.
5. There was 7mm loss of thickness to the bottom flange of the transverse end over 800 x 200mm.
6. There was 8mm loss of thickness over 150 x 200mm. **(photo 181)**
7. There was 7mm loss of thickness over 300 x 200mm of the top flange of the transverse end connecting to the lower boom. There were three rivets missing.
8. There was 7mm loss of thickness over 600 x 200mm to the top flange of the transverse end connecting to the lower boom.
9. There was 7mm loss of thickness over 400 x 200mm of the lower bottom flange.
10. There was 5mm loss of thickness over 200 x 200mm of the top flange of the transverse end connecting to the lower boom. There five rivets missing.
11. There was 5mm loss of thickness over 120 x 200mm of the bottom flange of the transverse end connecting to the lower boom.
12. There was seepage with an area of corrosion beneath it measuring 1000 x 250mm with pitting to 2mm.

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13. There were three areas clustered together with 100% loss of section measuring 30 x 30mm.
14. There was 7mm loss of thickness over 600 x 200mm.
15. There was 7mm loss of thickness over 350 x 200mm on the top flange of the transverse end. There were six rivets missing.
16. There was 8mm loss of thickness over 400 x 100mm on the transverse connecting to the lower boom.
17. There was 9mm loss of thickness over 800 x 200mm on the lower boom inner.
18. There was 7mm loss of thickness over 350 x 100mm. There were six missing rivets.
19. There was 7mm loss of thickness over 150 x 50mm section of the upright.
20. There was 8mm loss of thickness over 400 x 100mm on the top flange of the transverse length. There were three missing rivets.
21. There was 8mm loss of thickness over 300 x 200mm on the bottom part of the flange.
22. There was 7mm loss of thickness over 200 x 100mm on the top part of the flange. There were three rivets missing.
23. There was 7mm loss of thickness over 350 x 200mm on the bottom part of the flange. There was one missing rivet.
24. There was 4mm loss of thickness over 1000 x 100mm on T18.
25. There was 6mm loss of thickness over 1200 x 200mm length on the lower flange of MGE south side between T18 and T19.
26. There was 7mm loss of thickness over 300 x 200mm on the transverse end of the MGE.
27. There was 7mm loss of thickness over 400 x 200mm on the bottom transverse end of the MGE.
28. There was 6mm loss of thickness over 300 x 200mm on the MGE top flange. There were three rivets missing.
29. There was 6mm loss of thickness over 1000 x 200mm on MGE bottom flange.
30. There was 4mm loss of thickness over 1100 x 100mm on MGI2 at T19.
31. There was deck plate erosion over an area measuring 600 x 200mm with 1mm pitting.
32. There was corrosion over an area measuring 1200 x 500mm with 2mm pitting on the bottom flange of MGI4 at T19, with loss of section over 400 x 60mm. [\(photo 182\)](#)
33. There was corrosion on the edge of T19 west side on MGI2-5 measuring 5000 x 100mm with 1mm pitting.
34. There was 4mm loss of thickness over 2400 x 200mm at the end of the MGI.
35. There was 6mm loss of thickness over 200 x 200mm at the end of the main girder. There were two rivets missing.
36. There was 6mm loss of thickness over 200 x 200mm at the end of the main girder. There were two rivets missing.
37. There was 4mm loss of thickness over 350 x 200mm on the top flange at the end of the MGE. There were three rivets missing.
38. There was 4mm loss of thickness over 350 x 200mm on the bottom flange at the end of the MGE.
39. There was 6mm loss of thickness over 3000 x 400mm to the top and bottom flange and bracing on the edge of T20 at MGI2 with loss of section to the stiffener over 500 x 50mm. [\(photo 183\)](#)
40. There was 6mm loss of thickness over 1200 x 200mm on the lower flange of MGI2 with loss of section over 1200 x 100mm. [\(photo 183\)](#)

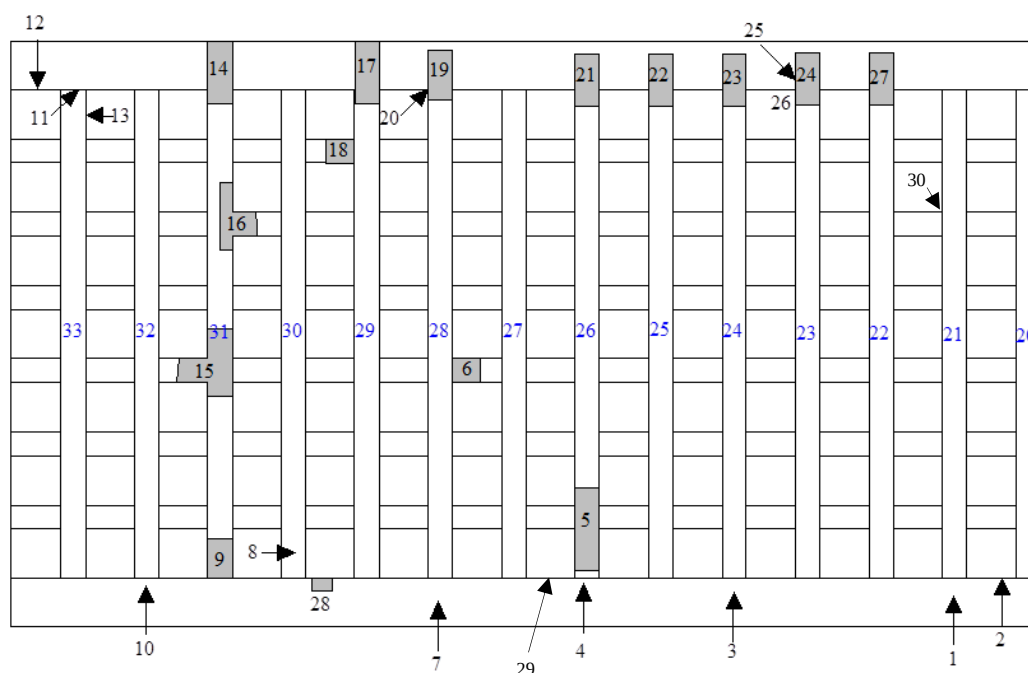
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41. The old gutter in between T19 and T20 had knife edging along all the top edges throughout and had completely corroded through at one point towards the north. 2No. brackets had loss of section at the MGE fixing points. **(photo 184)**
42. Bottom flange of MGE to a knife edge over 1200 x 100mm.
43. Vegetation growing within bottom boom with ponding water.

Span 3 Soffit

Main and transverse girders had minor areas of spot paint loss and surface corrosion. **(photo 185)** A new gutter system had been installed since the previous detailed examination. A lighting junction box to the soffit was in fair condition. **(photo 186)** Fault 1 was a good representation of all of span 3 at this location, i.e. 6 – 9mm loss of thickness to upper and lower flanges along lengths between 300 x 500mm and total loss of section to rivet heads. These faults were located just under the decks where water runs off. The bottom and rounded top flanges on the outside of these faults were generally also corroded with 2mm loss of thickness; where loss of section was significantly greater than this, it had been recorded. The end 50 to 100mm of the soffit decking was heavily corroded with 3-5mm loss of thickness and 50% loss of section to rivet heads.



1. There was 7mm loss of thickness over 320 x 200mm of the top flange of T21. There was total loss of section to four rivet heads. There was loss of section to the bottom flange over 150 x 100mm.
2. Below an area of seepage there was 10% loss of thickness to the vertical stiffener and deck plates over the piers. There was 7mm loss of thickness to 1600 x 200mm of the south truss north bottom flange.
3. There was loss of section measuring 130 x 15mm to the lower flange on the west side of T24. The remainder was down to knife edge thickness.
4. There was 7mm loss of thickness to the vertical stiffener beneath the edge of the deck on both sides.
5. There was up to 5mm loss of thickness to the bottom flange and almost complete loss of section to 70% of rivet heads in the area. **(photo 187)**

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6. There was 2mm loss of thickness to a section of the web of MGI4 measuring 800 x 500mm. To the same section of metal there was 3-4mm loss of thickness to the flange and rivet heads, and there was seepage in the same area.
7. The lower west flange of T28 was down to knife edge thickness along a length of 200mm.
8. There was pitting to 5mm depth over 1900 x 100mm on the west lower flange of T30.
9. The lower flange of T31 over the south truss was in worse condition than general. There was 7mm loss of thickness to 400 x 100mm and 3-4mm pitting to the adjacent (inner) along 600 x 100mm. **(photo 188)**
10. The bottom inside flange of the south truss had loss of section and sections of knife edge thickness over an area measuring 400 x 15mm.
11. Overall, there was surface corrosion to the lower boom inside web stiffener under T33.
12. The lower boom and lower inside flange had loss of section (900 x 30mm) and sections to knife edge thickness along a length measuring 2500mm.
13. There was 3-4mm pitting over 800 x 100mm of T33 to the east side of the lower flange.
14. The loss of thickness generally noted under the edge of the deck on the transverse lower flange was worse on T31, where there was loss of thickness ranging from 5mm – 7mm over 1200 x 100mm on the west side only.
15. To MGI4 there was surface corrosion to the web and stiffeners measuring 1300 x 550mm. There was 6mm loss of thickness over 1800 x 200mm of the bottom flange and 4mm loss of thickness to 300 x 200mm of the top flange. **(photo 189)**
16. To MGI2 there was 4mm loss of thickness to 1200 x 200mm of the top flange. There was 2-3mm pitting to the web and rivets over an area measuring 1300 x 550mm. The bottom flange was down to knife edge thickness along a 1200mm length. To T31 there was 2mm loss of thickness to vertical stiffeners beneath MGI2. There was 4mm loss of thickness to 2200 x 200mm of the bottom flange. **(photo 190)**
17. The loss of thickness generally noted under the edge of the deck on the transverse lower flange ranged from 5mm – 7mm over 1200 x 200mm to both sides of the bottom flange.
18. Over 1400 x 200mm of the bottom flange of MGI1 there was 4mm loss of thickness. There were 1-2mm pitting and spiked rivets on the top flange.
19. The loss of thickness generally noted under the edge of the deck on the transverse lower flange ranged from 5mm – 7mm over 1200 x 200mm to both sides of the bottom flange.
20. There was 5mm loss of thickness to the end west T28 vertical stiffener.
21. The loss of thickness generally noted under the edge of the deck on the transverse lower flange ranged from 5mm – 7mm over 1200 x 200mm to both sides of the bottom flange.
22. The loss of thickness generally noted under the edge of the deck on the transverse lower flange ranged from 5mm – 7mm over 1200 x 200mm to both sides of the bottom flange.
23. The loss of thickness generally noted under the edge of the deck on the transverse lower flange ranged from 5mm – 7mm over 1200 x 200mm to both sides of the bottom flange.
24. The loss of thickness generally noted under the edge of the deck on the transverse lower flange ranged from 5mm – 7mm over 1200 x 200mm to both sides of the bottom flange.
25. There was 180 x 35mm loss of section to the transverse end of the west vertical stiffener.
26. To a 600 x 400mm area of the soffit of T23 there was 2-3mm loss of thickness, eight completely missing heads and nine spiked heads.

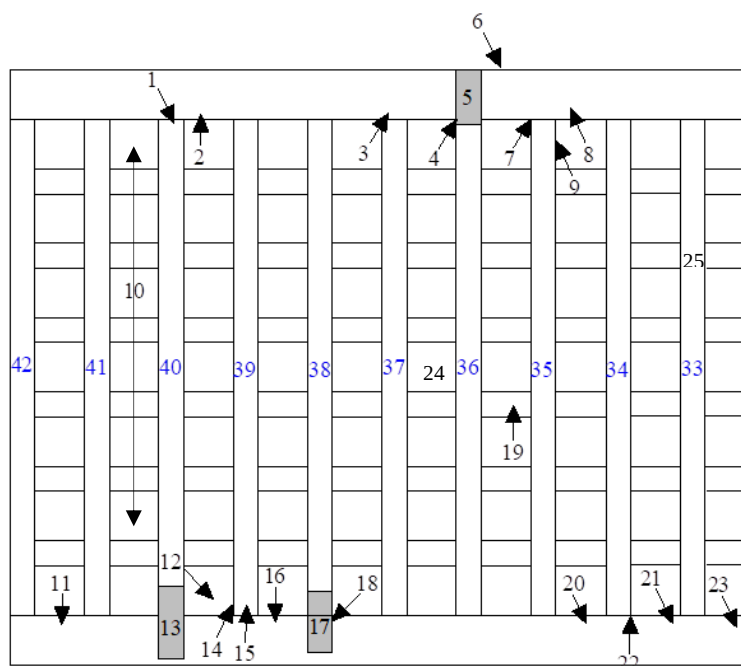
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27. Area of loss of thickness to T22 lower flanges reduced over 600 x 700mm, to a knife edge.
28. Loss of section to deck stiffener, 100 x 100mm. Loss of thickness to deck around fault of up to 7mm.
29. There was a lighting cable hanging down by 300mm. [\(photo 191\)](#)
30. There was 8mm loss of thickness to the MGI2, deck and T21 measuring 1000 x 700mm. [\(photo 192\)](#)

Span 4 Soffit

Main and transverse girders had spot areas of paint loss and surface corrosion. [\(photo 193\)](#) Main and transverse girder connections were generally in poor condition. [\(photo 194\)](#) A new gutter system had been installed since the previous detailed examination. There was corrosion to either side of the recorded faults resulting in 1-2mm pitting, generally 100-150mm either side of the faults. The areas of loss of section to the ends of the transverse flanges on span 4 over the south truss lower boom generally had loss of thickness of 3-5mm over the usual 300-500mm distances. The end 50-100mm of the soffit decking was heavily corroded (3-5mm loss of thickness and 50% loss of section to rivet heads



1. Up to 3mm loss of thickness to T40 at contact with MGE1, with spiking to 15 rivets.
2. There was 2000 x up to 100mm loss of section to the lower boom on the lower flange on the north side of the pier, with knife edging.
3. There was 120 x 40mm loss of section to the west end vertical stiffener.
4. There was 4mm loss of thickness to the top 150mm of T36 end vertical stiffener on the west side. [\(photo 195\)](#)
5. There was 6mm – 7mm loss of thickness along a 700mm length.
6. Loss of section of up to 20mm along initial 3000mm of MGE1 bottom flange, with 450 x 110mm loss of section at contact with pier

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7. A 3500mm length was down to knife edge thickness on the lower boom south lower flange, with up to 50mm loss of section.
8. There was 400 x 100mm loss of section and 15 spiked rivets to the lower boom south lower flange.
9. Loss of thickness of up to 3mm to bottom flange of T35 and spiking to 17 rivets at junction with MGE1, with loss of section 30 x 10mm.
10. Area of spot corrosion to deck totalling 6000 x 2000 x 1mm. **(photo 196)**
11. There was 450 x 100mm loss of section to the lower boom bottom flange, south side.
12. Water seeping through 50 x 50mm drain hole in base of MGE2 was causing 2mm loss of thickness to base of flange for a 70mm radius.
13. General fault; there was loss of section to the bottom flange of T40 to the end 1000mm, both sides.
14. There was 120 x 40mm loss of section to the west end vertical stiffener on T39.
15. Area of surface corrosion and spiked rivets to bottom of T39, 1000 x 50mm by 1mm.
16. Loss of section to bottom flange of MGE2, 300 x 60mm and 300 x 20mm. Loss of section to top flange in same location, 250 x 60mm.
17. There was 6mm – 7mm loss of thickness along a 1000mm length of the bottom flange of T38.
18. There was 120 x 40mm loss of section to the west end vertical stiffener on T38.
19. There was an area measuring 900 x 100mm with 2-3mm loss of thickness to the top and bottom flanges. There was also 1mm pitting to a 400 x 400mm area on MGI4. **(photo 197)**
20. Loss of section to bracing within MGE2, 80 x 60mm.
21. There was 160 x 80mm loss of section to the lower boom of the lower north flange.
22. Loss of thickness to top flange of MGE2 of up to 2mm at junction with T34.
23. There was 230 x 100mm loss of section to the end plate of the south truss.
24. Lighting & junction boxes to bottom flange & stiffener only had 1No. fixing each, fixing to flange missing a nut. **(photo 198)**
25. There was 5mm loss of thickness over 2000 x 2000mm to T33 at junction with MGI2 with 600 x 30mm loss of section to bottom flange of MGI2. **(photo 199)**

Span 5 Soffit (photo 200)

A new gutter system had been installed since the previous detailed examination; this was half full of ballast. **(photos 201)** The inner side of the upper flange on the MGE had up to 7mm loss of thickness over 200 x 200mm. The vertical bracing on the MGE had 100% loss of section over 150 x 50mm and surface corrosion for 350 x 50mm. The lower flange on the transverse edges had up to 3mm loss of thickness over 1000 x 100mm. On the upper flange of the MGE there were four rivets with 100% loss of section. The deck edge / angle / riser had loss of thickness of up to 6mm throughout. **(photo 202)**

The following faults are generalised for T57 to T62:

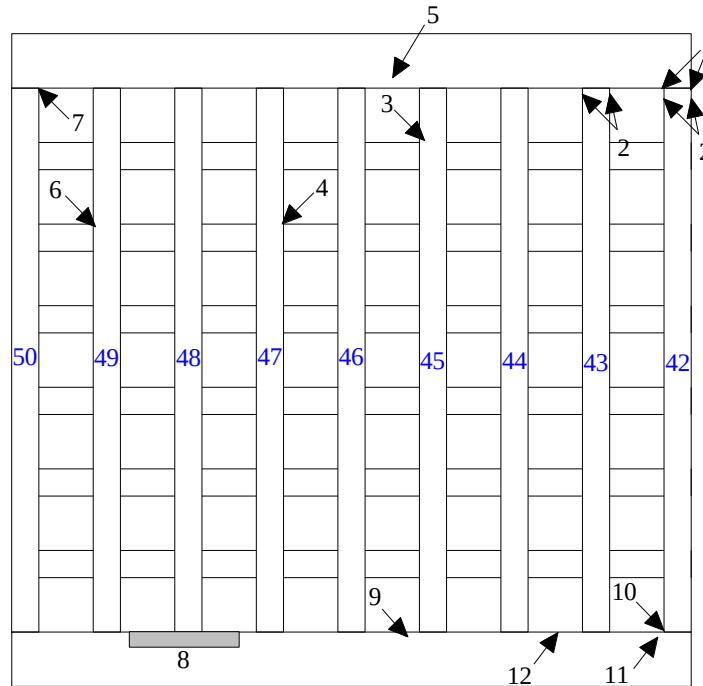
The vertical brace below the transverse connecting to the lower boom had 2mm loss of thickness. Below the vertical brace there was corrosion and 2mm pitting along 1000mm length.

The following faults are generalised for T50 to T57:

There was 6mm loss of thickness to 150mm of the upper flange on the inner section of the MGE. There was 4mm loss of thickness to 350 x 200mm of the lower flange on the MGE. There was 15% loss of paint work, 10% cracked paintwork, 1% spotting corrosion and 3% exposed steel corrosion with up to 3mm pitting to the transverses.

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1. The MGE inside bottom flange had between 4mm – 7mm loss of thickness over 1800 x 200mm.
2. The general condition throughout the span was the same as span 3 and 4; 3mm – 9mm loss of thickness between 800 x 100mm – 2000 x 100mm to both flanges on the transverse.
3. At the intersection between MGE1 and T45 there were several faults; MGE1 had paint loss over 450 x 400mm, the transverse had 100% paint loss to 800 x 300mm area on the web and flanges and surface corrosion. The soffit had 300 x 300mm area of paint loss. [\(photo 203\)](#)
4. At the intersection between MGI1 and T47 there was 100% paint loss and surface corrosion to an area measuring 400 x 200mm. [\(photo 204\)](#)
5. There was 2mm loss of thickness over 1000 x 300mm to the bottom flange of MGE1, this defect repeated sporadically throughout the girder. [\(photo 205\)](#)
6. At the intersection between MGI2 and T49 there were several faults; MGI2 bottom flange had 100% paint loss and 2mm loss of thickness to an area measuring 1200 x 250mm. MGI2 web had 100% paint loss and 3mm loss of thickness to an area measuring 800 x 600mm. MGI2 soffit had 70% paint loss and surface corrosion to an area measuring 400 x 400mm. T49 had 100% paint loss and surface corrosion to 1400 x 250mm area on the bottom flange. T49 web and stiffener had 100% paint loss and 2mm loss of thickness to an area measuring 600 x 200mm.
7. The inner bottom flange of MGI1 had 4mm-6mm loss of thickness to an area measuring 600 x 100mm.
8. There was a section of MGE2 measuring 7000 x 200mm with 100% paint loss and surface corrosion.
9. The inside bottom flange of MGE2 had 10-15% paint loss and surface corrosion.
10. There was 100% paint loss and < surface corrosion to the south side of the bottom flange of MGE2.
11. There was 5mm loss of thickness to bottom flange of MGE over 400 x 100mm with loss of section, 400 x 80mm. [\(photo 206\)](#)
12. Loss of thickness to deck stiffener of up to 10mm, 1000 x 6mm.

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Span 6 Soffit)

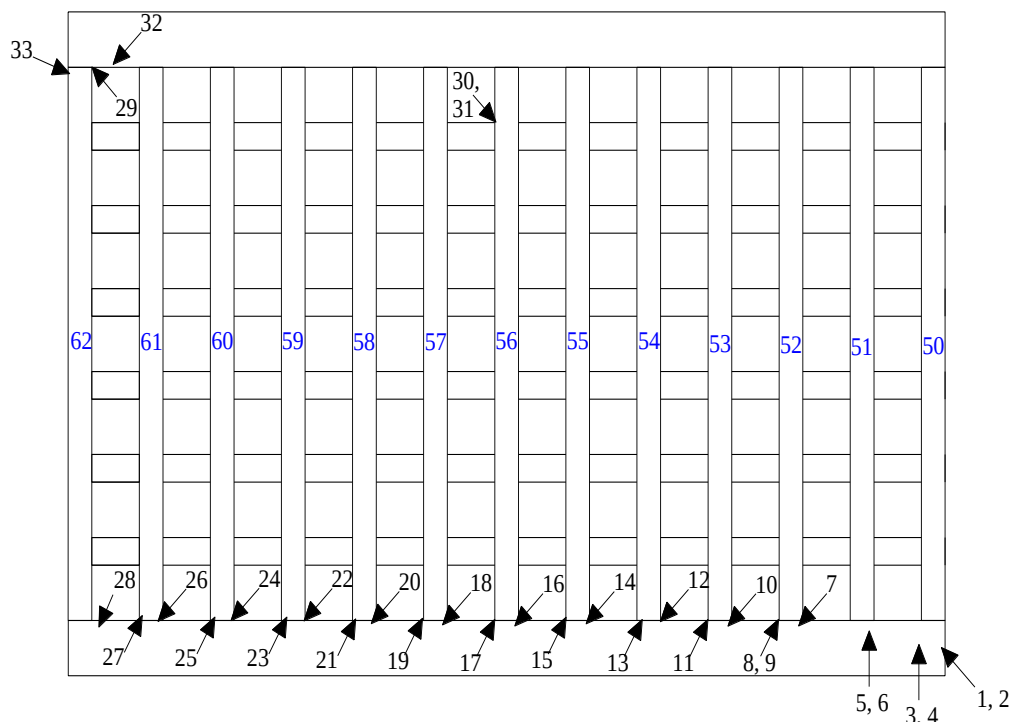
A new gutter system had been installed since the previous detailed examination. The inner side of the upper flange on the MGE had up to 7mm loss of thickness over 200 x 200mm. The vertical bracing on the MGE had 100% loss of section over 150 x 100mm and 10% loss of section over 350 x 100mm. The lower flange on the transverse edge had up to 3mm loss of thickness over 1000 x 50mm. On the upper flange of the MGE there were four rivets with 100% loss of section.

The following faults are generalised for T50 to T57:

There was 6mm loss of thickness to 150 x 100mm of the upper flange on the inner section of the MGE. There was 4mm loss of thickness to 350 x 100mm of the lower flange on the MGE. (photo 207) There was 15% loss of paint work, 10% cracked paintwork, 1% spotting corrosion and 3% exposed steel corrosion with up to 2mm pitting to the transverses.

The following faults are generalised for T57 to T62:

The vertical brace below the transverse connecting to the lower boom had 2mm loss of thickness. Below the vertical brace there was corrosion and 2mm pitting over 1000 x 100mm. (photo 208)



1. There was 7mm loss of thickness to an area measuring 300 x 200mm on the top flange of T50. On the east side of the transverse there was 40% loss of section to four rivets. On the bottom flange there was an area of loss of section measuring 120 x 100mm. The rivets on the bottom flange had cracked paint and were corroded.
2. To the west side of the top flange of T50 there was 7mm loss of thickness to an area measuring 300 x 100mm and 100% loss of section to two rivets. There was loss of section to the bottom flange measuring 200 x 100mm and paint loss/corrosion measuring 350 x 100mm.

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3. There was 7mm loss of thickness to an area measuring 300 x 100mm on the top flange of T51. There was 100% loss of section to three rivets.
4. The bottom flange of T51 had 7mm loss of thickness to an area measuring 200 x 100mm. There was paint and corrosion to an area of the bottom flange measuring 400 x 70mm.
5. There was 6mm loss of thickness to an area measuring 250 x 100mm on the top flange of T52. There was also 100% loss of section to four rivets.
6. There was 6mm loss of thickness to an area measuring 200 x 100mm on the bottom flange. There was 100% loss of section to one rivet. There was paint loss and surface corrosion to an area measuring 400 x 90mm to the vertical brace on the transverse end.
7. There was an area of corrosion measuring 700 x 100mm on the lower boom where the transverse met the west side.
8. There was 7mm loss of thickness to the top flange over an area measuring 200 x 100mm. There was 100% loss of section to four rivets.
9. There was 7mm loss of thickness to the bottom flange over an area measuring 200 x 100mm.
10. There was 4mm loss of thickness over 120 x 100mm of the top flange.
11. There was 7mm loss of thickness to an area measuring 230 x 100mm on the top flange. There was 100% loss of section to three rivets.
12. There was 3mm loss of thickness to an area measuring 100 x 50mm where the transverse met the lower boom on both the west and east side.
13. There was 3mm loss of thickness to an area measuring 150 x 70mm where the transverse met the lower boom on both the west and east side.
14. There was 3mm loss of thickness over 120 x 100mm of the top and bottom flanges of the transverse which connected to the lower boom.
15. There was 3mm loss of thickness over 120 x 100mm of the top and bottom flanges of the transverse which connected to the lower boom.
16. There was 3mm loss of thickness over 120 x 100mm of the top and bottom flanges of the transverse which connected to the lower boom.
17. There was 3mm loss of thickness over 120 x 100mm the top and bottom flanges of the transverse which connected to the lower boom.
18. There was 3mm loss of thickness over 120 x 100mm the top and bottom flanges of the transverse which connected to the lower boom. **(photo 209)**
19. There was 3mm loss of thickness over 120 x 100mm of the top and bottom flanges of the transverse which connected to the lower boom.
20. There was surface corrosion to an area measuring 100 x 40mm on the both the top and bottom flanges of the transverse where it connected to the lower boom.
21. There was surface corrosion to an area measuring 100 x 40mm to both the top and bottom flanges of the transverse where it connected to the lower boom.
22. There was 7mm loss of thickness to an area measuring 200 x 100mm to both the top and bottom flanges. There was 100% loss of section to eight rivets.
23. There was 7mm loss of thickness to an area measuring 200 x 100mm to both the top and bottom flanges. There was 100% loss of section to eight rivets.
24. There was surface corrosion to an area measuring 100 x 40mm to both the top and bottom flanges of the transverse where it connected to the lower boom.

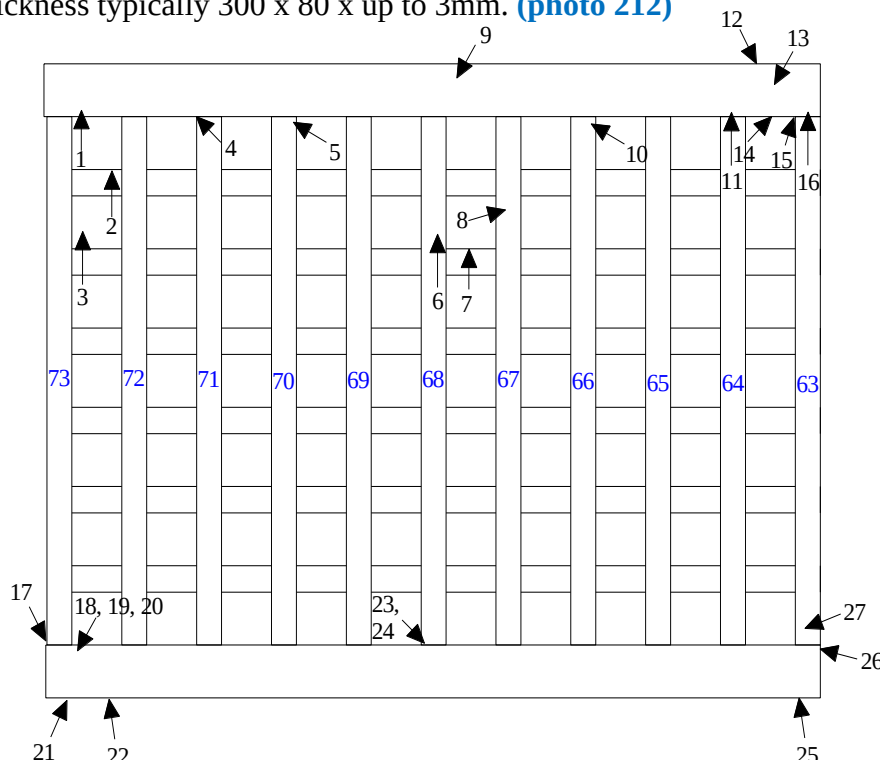
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25. There was surface corrosion to an area measuring 100 x 40mm to both the top and bottom flanges of the transverse where it connected to the lower boom.
26. There was 6mm loss of thickness over 200 x 100mm to the top flange transverse connecting to the lower boom.
27. There was 6mm loss of thickness over 200 x 100mm to the top flange transverse connecting to the lower boom.
28. There was 100% loss of section to an area measuring 400 x 90mm to the top flange of MGE2. There was 6mm loss of section to an area measuring 2000 x 100mm on the bottom flange of MGE2. There was 100% loss of section to ten rivets.
29. There was 100% loss of section over 400 x 200mm of the lower boom between T61 and T62. The lower boom had 4mm loss of thickness to the lower flange. There was an area of corrosion and up to 2mm pitting over an area measuring 800 x 200mm on T62.
30. There was corrosion and up to 2mm pitting over 800 x 200mm of MGI2.
31. There was corrosion over an area measuring 400 x 100mm on the lower flange of T57 near MGI2. [\(photo 210\)](#)
32. Loss of section to bottom flange of MGE, 400 x 100mm with knife edging.
33. Loss of section to top flange of lower boom of MGE, 500 x 100mm.

Span 7 Soffit

A new gutter system had been installed since the previous detailed examination. [\(photo 211\)](#) Where the transverse beams met the north main girder, there was loss of thickness of up to 2mm with some minor spots of loss of section at the overlap with MGE1. All transverse girders had minor loss of section to top and bottom flanges and loss of thickness to flange angles, first stiffeners and web edges. Deck stiffeners to the edges had loss of thickness typically 300 x 80 x up to 3mm. [\(photo 212\)](#)



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Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Examiner Comments on Structure condition

1. There was 100% paint loss and 4mm loss of thickness to an area measuring 300 x 100mm to the bottom flange of MGE1.
2. At the intersection between MGI1 and T72 there was paint loss and loss of section to the web and flange of the MGI and the transverse. MGI1 web had 80% paint loss and <2mm loss of thickness to an area measuring 700 x 450mm. MGI1 flange had 100% paint loss and up to 7mm loss of thickness to an area measuring 1000 x 300mm. The T72 web had 90% paint loss and surface corrosion to an area measuring 460 x 300mm. The T72 flange had 100% paint loss and surface corrosion to an area measuring 2000 x 300mm.
3. There was 70% paint loss and surface corrosion to an area measuring 600 x 200mm on the soffit.
4. There was 30% paint loss and surface corrosion to the gutter that ran transversely between T71 and T72. The down pipes and the supporting brackets were in fair condition and had 5% paint loss and surface corrosion.
5. There was 80% paint loss and a maximum of 5mm loss of thickness to an area measuring 400 x 500mm on the web of T71.
6. There was 100% paint loss and a maximum of 10mm loss of thickness to an area measuring 3100 x 200mm on T70.
7. There was 50% paint loss and surface corrosion to an area of the bottom flange measuring 450 x 100mm on T68. There was 50% paint loss and surface corrosion to an area of stiffener measuring 500 x 50mm on T68.
8. To the web and soffit of MGI2 there was 100% paint loss and surface corrosion to an area measuring 900 x 800mm. To the bottom flange of MGI2 there was 100% paint loss and up to 8mm loss of thickness over an area measuring 2100 x 300mm.
9. There was 90% paint loss and surface corrosion to an area measuring 400 x 400mm on the stiffener and web. There was 100% paint loss and surface corrosion to an area measuring 1100 x 200mm on the bottom flange.
10. Severe loss of thickness with frequent loss of section (up to 300 x 100mm) to braces within MGE1 between T66 and T70.
11. There was 100% paint loss and up to 12mm loss of thickness to an area measuring 3000 x 200mm on the bottom flange of T66. There was loss of section to 120 x 60mm. **(photo 213)**
12. Loss of thickness of up to 10mm to bottom flanges, top flanges and stiffener of T64 with loss of section to top flange of 70 x 40 on both sides, loss of section to bottom flange of 450 x 30 on both sides and complete loss of section to rivets on outer face. **(photo 214)**
13. Loss of section to lower flange of MGE1 over pier, 400 x 20mm. Spiked rivets over pier.
14. Water seeping through 20mm hole in MGE1, loss of thickness of up to 2mm around hole.
15. Loss of section to internal braces within MGE1 between T63 and T64, typically 20 x 20mm. **(photo 215)**
16. Loss of section to bottom flange of MGE1 below T63, 1000 x 100mm, and loss of section to top flange in same location, 250 x 70mm.
17. Loss of section to either side of bottom flange of T63 at junction with MGE1, 500 x 95mm and 150 x 80mm. There was 50% paint loss and 5mm loss of thickness to an area measuring 700 x 250mm on the stiffener and web of T63. **(photo 216)**
18. Loss of section to end of T73, 40 x 80mm, plus loss of section to top flange of T73, 200 x 20mm.

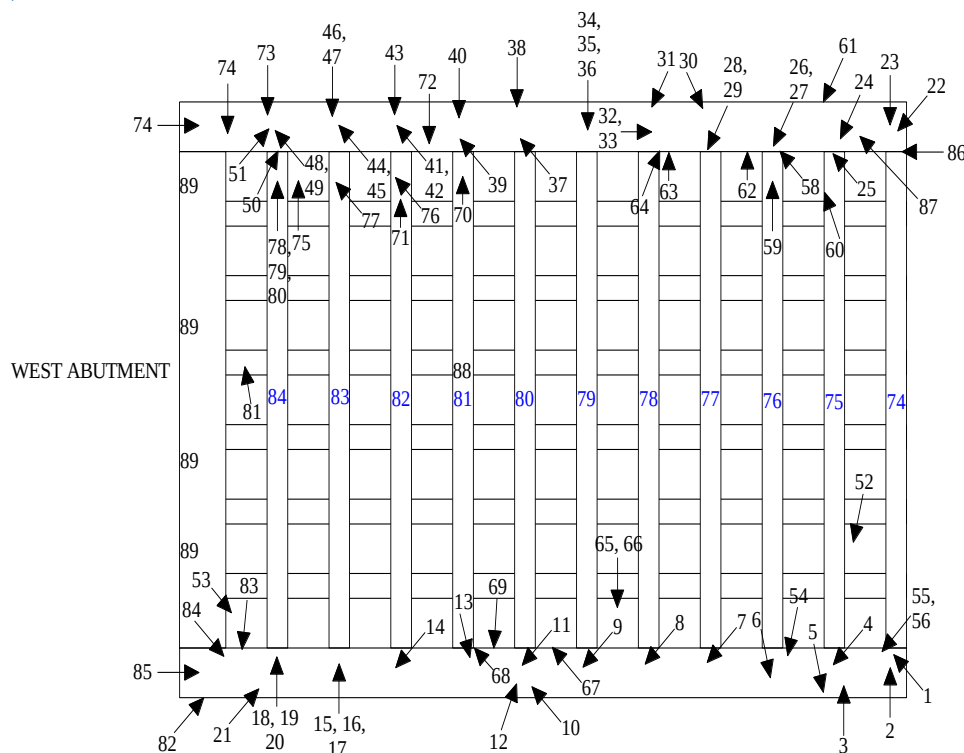
ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
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Examiner Comments on Structure condition

19. There was 100% loss of section along a 100mm length of the lower flange on the bottom boom below the transverse.
20. There was 10mm loss of thickness over an area measuring 400 x 100mm on the lower flange at the end of T73.
21. There was 7mm loss of thickness over 300 x 100mm of the upper flange of the transverse.
22. Loss of section to bottom flange of MGE2, 350 x 40mm.
23. 14 rivets along top face of bottom flange of MGE2 spiked or severe loss of section.
24. There was 4mm loss of thickness over an area measuring 200 x 100mm on both the upper and lower flanges of T68.
25. There was surface corrosion and 1mm pitting along a 1000mm length on the edge of the boom on the west side of the transverse.
26. 100mm knife edge thinning to bottom flange of MGE2 over pier 6.
27. Loss of section to top flange of MGE2, 250 x 80mm.
28. 4No. missing rivets to top flange of T63 at contact with deck.

Span 8 Soffit

A new gutter system had been installed since the previous detailed examination. Loss of thickness to upper flange of lower boom of MGE1 to a depth of 3 to 4mm, 80% of boom affected. Deck edges & risers were typically in poor condition with 250mm wide strips of heavy corrosion to plate, angle, rivets & deck stiffeners. **(photo 217)** MGIs at bearing points had loss of thickness to back plates, top flanges and stiffeners, typically 500 x 300 x up to 6mm, loss of section to back plates averaging 200 x 20mm, loss of thickness to bottom flanges typically 1000 x 200 x up to 8mm and loss of section to bottom flanges averaging 500 x 20mm. **(photo 218)**



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Examiner Comments on Structure condition

1. There was 4mm loss of thickness to the top flange of T74 over an area measuring 400 x 120mm and loss of section over 100 x 40mm. **(photo 219)**
2. There was 3mm loss of thickness to the lower flange of T74 over an area measuring 250 x 250mm.
3. There was loss of section measuring 100 x 5mm to the lower flange of T75.
4. There was 3mm loss of thickness to the top flange of T75 over an area measuring 400 x 100mm.
5. There was 5mm loss of thickness to the lower flange of T75 over an area measuring 100 x 100mm.
6. There was 2mm loss of thickness to the top flange of T76 over an area measuring 400 x 70mm. There were four missing or spiked rivets.
7. There was 2mm loss of thickness to the top flange of T77 over an area measuring 400 x 70mm. There were four missing or spiked rivets.
8. There was 2mm loss of thickness to the top flange of T78 over an area measuring 400 x 110mm. There were five missing or spiked rivets.
9. There was 3mm loss of thickness to the top flange of T79 over an area measuring 400 x 100mm. There were five missing or spiked rivets.
10. There was loss of section measuring 40 x 30mm to the lower flange of T80.
11. There was 4mm loss of thickness to the top flange of T80 over an area measuring 400 x 100mm. There were six missing or spiked rivets.
12. There was loss of section measuring 100 x 80mm to the lower flange of T80. **(photo 220)**
13. There was 2mm loss of thickness over an area measuring 400 x 90mm to the top flange of T81.
14. There was 2mm loss of thickness over an area measuring 400 x 100mm to the top flange of T81.
15. There was 1mm loss of thickness over an area measuring 250 x 250mm to the lower flange of T83.
16. There was 2mm loss of thickness over an area measuring 400 x 30mm to the top flange of T83.
17. There was 1mm loss of thickness over an area measuring 150 x 150mm to the lower flange of T83.
18. There was 1mm loss of thickness over an area measuring 400 x 80mm to the lower flange of T84.
19. There was 2mm loss of thickness over an area measuring 400 x 120mm to the top flange of T84.
20. There was 1mm loss of thickness over an area measuring 400 x 100mm to the lower flange of T84.
21. There was loss of section measuring 20 x 20mm to the lower flange of T84.
22. There was 3mm loss of thickness over an area measuring 400 x 500mm to the top flange of T74.
23. There was 2mm loss of thickness over an area measuring 4000 x 90mm to the top flange of T81.
24. There was loss of section to spot areas (totalling 30 x 8mm) on the lower flange of T75.
25. There was 2mm loss of thickness over an area measuring 400 x 90mm to the top flange of T75. There were three missing or spiked rivets.
26. There was 3mm loss of thickness over an area measuring 800 x 200mm to the lower flange of T76. There were eight missing or spiked rivets.
27. There was 2mm loss of thickness over an area measuring 4000 x 90mm to the top flange of T76. There were three missing or spiked rivets.
28. There was 2mm loss of thickness over an area measuring 400 x 70mm to the top flange of T77. There were four missing or spiked rivets.
29. There was loss of section measuring 30 x 20mm to the lower flange of T77.
30. There was loss of section measuring 20 x 10mm to the lower flange of T77.
31. There was loss of section measuring 40 x 30mm to the lower flange of T78. **(photo 221)**

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Examiner Comments on Structure condition

32. There was 2mm loss of thickness over an area measuring 400 x 50mm to the top flange of T78. There were five spiked or missing rivets.
33. There was paint missing 40% of the surface area at the end of the steel.
34. There was loss of section measuring 40 x 40mm to the lower flange of T79.
35. There was 2mm loss of thickness over an area measuring 400 x 100mm to the top flange of T79.
36. There was 2mm loss of thickness over an area measuring 500 x 150mm to the lower flange of T80.
37. There was 2mm loss of thickness over an area measuring 400 x 120mm to the top flange of T80.
38. There was loss of section measuring 70 x 20 to the lower flange of T80.
39. There was 1mm loss of thickness over an area measuring 400 x 70mm to the top flange of T81.
40. There was 2mm loss of thickness over an area measuring 500 x 150mm to the lower flange of T81.
41. There was 2mm loss of thickness over an area measuring 500 x 150mm to the lower flange of T82.
42. There was 2mm loss of thickness over an area measuring 400 x 900mm to the top flange of T82. There were sixteen missing or spiked rivets.
43. There was 3mm loss of thickness over an area measuring 700 x 150mm to the top flange of T83. The top and bottom flange were both wet.
44. There was 3mm loss of thickness over an area measuring 400 x 1200mm to the top flange of T83.
45. There was 2mm loss of thickness over an area measuring 700 x 150mm to the lower flange of T83.
46. There was loss of section measuring 70 x 15mm to the top flange of T83.
47. There was 4mm loss of thickness over an area measuring 700 x 150mm to the lower flange of T83.
48. There was loss of section measuring 320 x 30mm to the lower flange of T84.
49. There was 3mm loss of thickness over an area measuring 700 x 150mm to the lower flange of T84.
50. There was 4mm loss of thickness over an area measuring 400 x 800mm to the top flange of T84. There were fourteen missing or spiked rivets.
51. There was 3mm loss of thickness over an area measuring 900 x 150mm to the lower flange of T84. [\(photo 222\)](#)
52. Up to 60% of the paint work was crazed and there was spot corrosion to 1mm depth.
53. There was loss of section measuring 300 x 300mm to the deck. [\(photo 223\)](#)
54. There was 2mm loss of thickness over an area measuring 1000 x 200mm. There were ten rivets missing or spiked.
55. The worst corrosion to the deck was on the edges where 2% of it was wet. There was 3mm loss of thickness to the deck plate.
56. There was surface corrosion and 4mm loss of thickness to an area measuring 700 x 700mm on the underside of MGE2.
57. There was surface corrosion and 3mm loss of thickness over an area measuring 3000 x 150mm to the top flange of MGE2.
58. There was 4mm loss of thickness along a 300mm length of the stiffener of T76. There was 2mm loss of thickness to an area measuring 400 x 400mm on the web.
59. There was 5mm loss of thickness along a length measuring 4500mm to the lower flange of T76. The lower flange was dripping wet.
60. There was 4mm loss of thickness along a 3000mm length of the lower flange of T75.

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Examiner Comments on Structure condition

61. There was surface corrosion and 2mm loss of thickness for 20% of the span and surface corrosion to 1mm depth on the rivets. 3% of the rivets were spiked.
62. There was 1mm depth surface corrosion over an area measuring 1000 x 1000mm on the web of MGE1.
63. There was surface corrosion to 3mm depth over an area measuring 1500 x 1500mm on the lower flange of MGE1.
64. There was surface corrosion to 2mm depth over an area measuring 400 x 400mm to the deck, there were also several spiked rivets.
65. There was an area measuring 1000 x 1000mm with surface corrosion and 2mm loss of thickness. There were eight spiked or missing rivets.
66. There was corrosion to 1mm depth over an area measuring 400 x 30mm to the deck.
67. There was wet area measuring 1500 x 1500 with surface corrosion and 3mm loss of thickness.
68. There was surface corrosion to <1mm depth over an area measuring 400 x 400mm to the deck plate.
69. There was surface corrosion to <1mm depth to the stiffeners and web of MGE2. Up to 20% of the surface area was wet.
70. There was 6mm loss of thickness over 4500 x 100mm of the lower flange of T81.
71. There was 4mm loss of thickness over 2000 x 100mm of the lower flange of T82.
72. There was surface corrosion to 2mm depth over an area measuring 800 x 800mm to MGE1.
73. There was corrosion to 2mm depth over an area measuring 1700 x 300mm to the underside of MGE1.
74. Bearing plinth under MGE1 – up to 5mm loss of thickness over 1200 x 1200 x 300mm.
75. Typical spot corrosion to the deck.
76. There was 3mm loss of thickness to an area measuring 3000 x 300mm to T82.
77. There was 2mm loss of thickness to an area measuring 4000 x 300mm to T83.
78. There was 2mm loss of thickness to an area measuring 5000 x 300mm to T84.
79. There was 4mm loss of thickness over 2500 x 100mm to the lower flange of T84.
80. There was surface corrosion to 5mm depth over an area measuring 3000 x 3000mm to the stiffener, web and end plate base.
81. There was surface corrosion and loss of thickness to 3mm depth over an area measuring 1200 x 1200mm to the lower flange of the MGI.
82. There was 8mm loss of thickness to an area measuring 300 x 300 to the lower flange of MGI2.
83. There was surface corrosion and 3mm loss of thickness to an area measuring 3000 x 3000mm on MGI2. [\(photo 224\)](#)
84. Loss of section measuring 300 x 170mm with knife edge thickness around the sides to the deck plate.
85. Bearing plinth under MGE2 – up to 6mm loss of thickness over 1200 x 1200 x 300mm.
86. Loss of thickness to a knife edge to bottom flange of lower boom of MGE, 2000 x 100mm.
87. Area between T74 & T76 – connection with MGE poor, heavy loss of thickness throughout with rust debris to bottom flange, rivet heads spiked & missing. [\(photo 225\)](#)
88. There was 3mm loss of thickness over 500 x 300mm to MGI / T81 / deck. [\(photo 226\)](#)
89. There was 4mm loss of thickness over 1200 x 750mm to the deck with loose rust debris to the top of ballast wall. [\(photo 227\)](#)

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Examiner Comments on Structure condition

Top of Deck

The top of the bridge (formerly the track top) was vegetated throughout, mainly with grass and weeds growing from the deck. **(photos 228 & 229)** Ballast boards along each edge of the deck held in place with scaffold bars were in fair condition although fixings were generally in poor condition. **(photos 230, 231 & 232)** There were no ballast boards in place over span 8. **(photo 233)**

There was non-offensive graffiti throughout the barrier fence in front of the east end of the north truss. **(photo 234)**

Exposed deck plates over span 2 were in fair condition. **(photos 235, 236 & 237)**

Palisade fencing to the east end of the top of the deck was in fair condition with 1No. loose vertical strut to the gate. **(photo 238)** Anti-vandal fencing to the corners of the palisade fencing was in good condition. **(photo 239)** Palisade fencing to the west end of the top of the deck was in good condition. **(photo 240)**

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Photographs of structure



Photograph 1: North elevation



Photograph 2: South elevation

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Photographs of structure



Photograph 3: View along top of structure looking east



Photograph 4: View along top of structure looking west

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Photographs of structure



Photograph 5: View from end of structure looking east



Photograph 6: View from end of structure looking west

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Photographs of structure



Photograph 7: Palisade fencing to east end



Photograph 8: Palisade fencing to west end

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Photographs of structure



Photograph 9: View along canal looking north



Photograph 10: View along canal looking south

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Photographs of structure



Photograph 11: Parapet structure number



Photograph 12: Pier 1 structure number

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Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 13: Bridge closed sign employed during examination



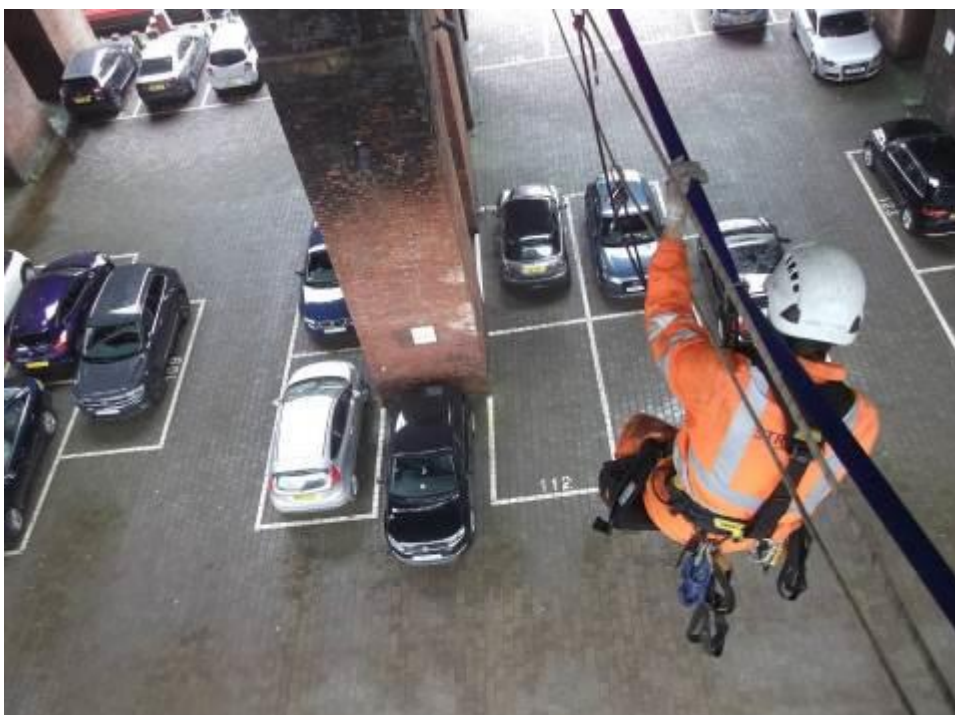
Photograph 14: During examination

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Photographs of structure



Photograph 15: During examination



Photograph 16: During examination

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Photographs of structure



Photograph 17: During examination



Photograph 18: Fencing blocking access to east abutment

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Photographs of structure



Photograph 19: General view of west abutment



Photograph 20: General view of bearing shelf to west abutment

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Photographs of structure



Photograph 21: Loss of thickness & loss of section to north bearing of west abutment



Photograph 22: Loss of thickness & loss of section to north bearing of west abutment

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Photographs of structure



Photograph 23: Debris to bearing shelf adjacent to north bearing of west abutment



Photograph 24: Loss of thickness & loss of section to south bearing of west abutment

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Photographs of structure



Photograph 25: Loss of thickness & loss of section to south bearing of west abutment



Photograph 26: Typical loss of thickness to MGI bearings of west abutment

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Photographs of structure



Photograph 27: Area of missing & displaced brickwork to ballast wall of west abutment



Photograph 28: Typical graffiti & seepage to west abutment

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Photographs of structure



Photograph 29: Area of mortar loss with spot vegetation growth to west abutment



Photograph 30: Area of spalled concrete to bearing plinth of west abutment

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Photographs of structure



Photograph 31: Rust debris to bearing plinth of west abutment



Photograph 32: Vertical fracture to bearing plinth of west abutment

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Photographs of structure



Photograph 33: Sapling growth to bearing shelf of west abutment



Photograph 34: Area of missing / spalled brickwork to west abutment

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Photographs of structure



Photograph 35: General view of pier 1, north column



Photograph 36: General view of pier 1, south column and interconnecting truss of pier 1

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Photographs of structure



Photograph 37: Area of loss of section to interconnecting truss of pier 1



Photograph 38: General view of extra column to span 1

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Photographs of structure



Photograph 39: Area of loss of thickness to north column of pier 1



Photograph 40: Area of loss of section to north column of pier 1

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Photographs of structure



Photograph 41: Area of vegetation growth to south column of pier 1



Photograph 42: Horizontal fracture to extra column of pier 1

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Photographs of structure



Photograph 43: Vertical fracture & vegetation growth to extra column of pier 1



Photograph 44: Area of seepage & algae growth to extra column of pier 1

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Photographs of structure



Photograph 45: General view of pier 2, south column and interconnecting truss of pier 2



Photograph 46: Diagonal fractures to north column of pier 2

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 47: Area of loss of thickness to north column of pier 2



Photograph 48: Area of loss of section to lower angle of north column of pier 2

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 49: Area of loss of section to upper angle of north column of pier 2



Photograph 50: Area of seepage & loss of thickness to south column of pier 2

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 51: Vertical fracture to south column of pier 2



Photograph 52: Missing packing timber & loss of thickness to south column of pier 2

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 53: General view of north column of pier 3



Photograph 54: Graffiti & diagonal fracture to north column of pier 3

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 55: General view of south column of pier 3



Photograph 56: Area of loss of section to interconnecting truss of pier 3

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 57: Vertical fractures & loss of thickness to north column of pier 3



Photograph 58: Area of loss of thickness to stiffener of north column of pier 3

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 59: Area of seepage, vegetation growth & loss of thickness to south column of pier 3



Photograph 60: Area of loss of thickness to south column of pier 3

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 61: Area of loss of section to south column of pier 3



Photograph 62: Vertical & diagonal fractures to south column of pier 3

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 63: General view of south column of pier 4



Photograph 64: Area of loss of thickness to interconnecting truss of pier 4

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 65: Area of loss of section to upper angle of north column of pier 4



Photograph 66: Vertical & diagonal fractures to north column of pier 4

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 67: Vertical fractures to north column of pier 4



Photograph 68: Area of seepage & loss of thickness to north column of pier 4

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 69: Vertical fractures to north column of pier 4



Photograph 70: Area of seepage & loss of thickness to south column of pier 4

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 71: Vertical fractures to south column of pier 4



Photograph 72: Vertical branched fracture to south column of pier 4

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 73: Area of seepage & vegetation growth to south column of pier 4



Photograph 74: Area of loss of thickness & vertical fracture to south column of pier 4

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 75: Area of loss of thickness to drainpipe bracket of south column of pier 4



Photograph 76: General view of north column of pier 5

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 77: General view of interconnecting truss of pier 5



Photograph 78: Vertical fracture to north column of pier 5

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 79: Area of loss of thickness to south column of pier 5



Photograph 80: General view of north column of pier 6

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 81: Area of loss of thickness to interconnecting truss of pier 6



Photograph 82: Vertical fracture & area of loss of thickness to south column of pier 6

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 83: General view of south column of pier 7



Photograph 84: Area of loss of section to interconnecting truss of pier 7

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 85: Vertical branched fracture & buddleia growth to north column of pier 7



Photograph 86: Vegetation growth & loose / missing / rotten packing timber to north column of pier 7

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 87: Horizontal fracture to south column of pier 7



Photograph 88: Area of seepage to south column of pier 7

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 89: Typical condition of castle façades to piers



Photograph 90: Typical paint loss & surface corrosion to castle façades of piers

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 91: Typical paint loss & surface corrosion to castle façades of piers



Photograph 92: Typical proximity to Metrolink bridge & OLE of south castle façades to piers

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 93: Typical loss of thickness & rust jacking to panel joints of castle façades to piers



Photograph 94: Typical condition of tie bar connections to castle façades of piers

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 95: Typical debris to tops of piers within castle façades



Photograph 96: Typical loss of thickness to truss section diagonal member joints

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 97: Typical cracked / loose / missing mortar to bottom flanges of bottom booms



Photograph 98: Typical pitting & missing / pointed rivet heads to top flanges of top booms

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 99: General view of north truss of span 2



Photograph 100: Loss of section to diagonal member of north truss of span 2

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 101: Loss of thickness / delamination to base of end plate of north truss of span 2



Photograph 102: Loss of section to bottom boom, bottom flange of north truss of span 2

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 103: Loss of section to bottom boom, top flange to north truss of span 2



Photograph 104: Loss of section to bottom boom internal stiffener of north truss of span 2

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 105: Loss of section to diagonal bracing of north truss of span 2



Photograph 106: Loss of section to vertical section plate of north truss of span 2

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 107: General view of south truss of span 2



Photograph 108: Missing rivet to south truss of span 2

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 109: Loss of section to diagonal bracing of south truss of span 2



Photograph 110: Split to end plate corner of south truss of span 2

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 111: Loss of section to top boom, top flange of south truss of span 2



Photograph 112: Loss of section to top boom, top flange of south truss of span 2

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 113: Loss of section to bottom boom internal stiffener of south truss of span 2



Photograph 114: Loss of section to vertical section above pier of south truss of span 2

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 115: Loss of section to end plate flange of north truss of span 3



Photograph 116: Loss of section to diagonal member of north truss of span 3

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 117: Loss of section to diagonal bracing of north truss of span 3



Photograph 118: Loss of section to diagonal bracing of north truss of span 3

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 119: Loss of thickness & section to end plate of north truss of span 3



Photograph 120: Loss of thickness to diagonal member of south truss of span 3

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 121: Loss of section to bottom boom, top flange of south truss of span 3



Photograph 122: Loss of section to diagonal bracing of south truss of span 3

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 123: Loss of section to top boom, top flange of north truss of span 4



Photograph 124: Loss of thickness to top boom, top flange of north truss of span 4

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 125: Loss of section to diagonal bracing of north truss of span 4



Photograph 126: Loss of section to bottom boom, bottom flange of north truss of span 4

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 127: Deformation & missing rivet to diagonal member of south truss of span 4



Photograph 128: Loss of section to top boom of south truss of span 4

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 129: Loss of section to end plate of south truss of span 4



Photograph 130: Loss of thickness & section to bottom boom, top flange of south truss of span 4

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 131: General view of north truss of span 5



Photograph 132: Typical spiking to lower flange rivets of north truss of span 5

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 133: Loss of thickness to end beam of north truss of span 5



Photograph 134: Loss of section to diagonal member of north truss of span 5

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 135: Loss of thickness to diagonal bracing of north truss of span 5



Photograph 136: Rust jacking to diagonal member of north truss of span 5

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 137: Loss of thickness to top boom, top flange of north truss of span 5



Photograph 138: Loss of section to bottom boom, bottom flange of north truss of span 5

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 139: General view of south truss of span 5



Photograph 140: Typical pooling & debris to bottom boom of south truss of span 5

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 141: Loss of thickness & section to diagonal bracing of south truss of span 5



Photograph 142: Sapling growth to end beam void of south truss of span 5

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 143: Loss of thickness & rust jacking to diagonal member of south truss of span 5



Photograph 144: Debris build-up between south truss of span 5 & adjacent structure

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 145: Loss of thickness to end beam stiffeners of south truss of span 5



Photograph 146: Loss of thickness & section to diagonal member of north truss of span 6

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 147: Loss of thickness & section to diagonal member of north truss of span 6



Photograph 148: Loss of section to bottom boom internal stiffener of north truss of span 6

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 149: Typical flooding to bottom boom of south truss of span 6



Photograph 150: Loss of section to end plate stiffener of south truss of span 6

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 151: Loss of section to bottom boom, bottom flange of south truss of span 6



Photograph 152: Loss of thickness to end section, lower horizontal stiffener of north truss of span 7

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 153: Loss of section to end section upper horizontal stiffener of north truss of span 7



Photograph 154: Loss of section to bottom boom, top & bottom flanges of north truss of span 7

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 155: Loss of thickness & section to diagonal member of north truss of span 7



Photograph 156: Concrete & vegetation growth to bottom boom of north truss of span 7

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 157: Typical loss of thickness to bottom boom connections with transverse girders of north truss of span 7



Photograph 158: Loss of section to end section middle vertical stiffener of south truss of span 7

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 159: Loss of thickness & section to diagonal member of south truss of span 7



Photograph 160: Loss of section to bottom boom, bottom flange of south truss of span 7

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 161: Loss of thickness & section to end section lowest horizontal stiffener of south truss of span 7



Photograph 162: Vegetation growth to bottom boom of south truss of span 7

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 163: Loss of section to diagonal bracing of north truss of span 8



Photograph 164: Missing rivet to diagonal bracing of north truss of span 8

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 165: Vegetation growth to bottom boom of north truss of span 8



Photograph 166: Deformed & detached ballast plate to north truss of span 8

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 167: Typical flooding to bottom boom of south truss of span 8



Photograph 168: Loss of thickness & section to lower web stiffener of south truss of span 8

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 169: Missing rivet to end plate of south truss of span 8



Photograph 170: Sapling growth to bottom boom of south truss of span 8

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 171: Scaffold boards to diagonal bracing of south truss of span 8



Photograph 172: Loss of section to bottom boom stiffener of south truss of span 8

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 173: Typical paint loss, surface corrosion & pitting to tops of upper transverse steelworks



Photograph 174: Typical corrosion & pitting to webs of upper transverse steelworks

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 175: Typical loss of thickness to west bottom angles of upper transverse steelworks



Photograph 176: Loss of section to upper transverse steelwork T1

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 177: Loss of section to upper transverse steelwork T21



Photograph 178: Loss of section to upper transverse steelwork T27

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 179: Typical loss of thickness to transverse girders of soffit of span 2 at MGE connections



Photograph 180: New gutter system to soffit of span 2

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 181: Loss of thickness to T18 of soffit of span 2



Photograph 182: Corrosion, pitting & loss of section to MG14 of soffit of span 2

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 183: Loss of thickness & section to T20 & MGI2 of soffit of span 2



Photograph 184: Loss of section to brackets of old guttering between T19 & T20 of soffit of span 2

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 185: Typical spot paint loss & surface corrosion to soffit of span 3



Photograph 186: Lighting junction box of soffit of span 3

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 187: Loss of thickness & section to T26 of soffit of span 3



Photograph 188: Loss of thickness & pitting to T31 of soffit of span 3

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 189: Surface corrosion & loss of thickness to MG14 of soffit of span 3



Photograph 190: Loss of thickness & pitting to MG12 & T31 of soffit of span 3

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 191: Lighting cable hanging down by MGE2 of soffit of span 3



Photograph 192: Loss of thickness to MGI2, deck & T21 of soffit of span 3

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 193: Typical spot paint loss & surface corrosion to soffit of span 4



Photograph 194: Typical condition of main / transverse girder connections to soffit of span 4

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 195: Loss of thickness to vertical stiffener of T36 to soffit of span 4



Photograph 196: Spot corrosion to deck of soffit of span 4

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 197: Loss of thickness & pitting to MGI4 of soffit of span 4



Photograph 198: Missing nut to fixing of lighting junction of soffit of span 4

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 199: Loss of thickness to T33 & section to MGI2 of soffit of span 4



Photograph 200: General view of soffit of span 5

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 201: Ballast to new gutter system of soffit of span 5



Photograph 202: Typical loss of thickness to deck edge / angle / riser of soffit of span 5

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 203: Paint loss & surface corrosion to MGE1 & T45 connection to soffit of span 5



Photograph 204: Paint loss & surface corrosion to MGE1 & T47 connection to soffit of span 5

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 205: Loss of thickness to MGE1 of soffit of span 5



Photograph 206: Loss of thickness & section to MGE2 of soffit of span 5

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 207: Typical loss of thickness to T50 – T57 at MGE connections to soffit of span 6



Photograph 208: Typical corrosion & pitting below vertical braces to T57 – T62 of soffit of span 6

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 209: Loss of thickness to T57 at MGE2 connection to soffit of span 6



Photograph 210: Corrosion to T57 of soffit of span 6

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 211: New gutter system to soffit of span 7



Photograph 212: Typical loss of thickness to deck stiffeners to edges of soffit of span 7

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 213: Loss of section to T66 of soffit of span 7



Photograph 214: Loss of thickness to T64 of soffit of span 7

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 215: Typical loss of section to MGE1 internal braces between T63 & T64 of soffit of span 7



Photograph 216: Loss of thickness & section T63 at MGE1 connection of soffit of span 7

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 217: Typical corrosion to deck edges of soffit of span 8



Photograph 218: Typical loss of thickness & section to MGIs at bearing points of soffit of span 8

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 219: Loss of thickness & section to T74 of soffit of span 8



Photograph 220: Loss of section to T80 of soffit of span 8

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 221: Loss of section to T78 of soffit of span 8



Photograph 222: Loss of thickness to T84 of soffit of span 8

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 223: Loss of section to deck of soffit of span 8



Photograph 224: Surface corrosion & loss of thickness to MGI2 of soffit of span 8

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 225: Typical loss of thickness to T74 – 76 at connection with MGE1 of soffit of span 8



Photograph 226: Loss of thickness to MGI3 / T81 / deck of soffit of span 8

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 227: Loss of thickness to deck & loose rust debris to ballast wall of soffit of span 8



Photograph 228: Typical vegetation growth to top of deck

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 229: Typical vegetation growth to top of deck



Photograph 230: General view of ballast boards held in place with scaffold bars to top of deck

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 231: Typical condition of ballast boards to top of deck



Photograph 232: Typical condition of ballast board fixings to top of deck

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 233: No ballast boards to span 8 top of deck



Photograph 234: Graffiti to barrier fence to east end of north truss

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 235: Typical condition of exposed deck plates to top of deck



Photograph 236: Typical condition of exposed deck plates to top of deck

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 237: Typical condition of exposed deck plates to top of deck



Photograph 238: Loose vertical strut to palisade fencing to east end of top of deck

ELR: MAJ	Structure No: 289	Mileage:	Examination date: 07/09/2020
Route: Manchester Central – Cornbrook - Allerton			OS ref: SJ 830 976
Name: Castlefield Viaduct			Type: Viaduct
Carrying/Over: Disused rail / Canal, rail, road & land			No. of spans: 8

Photographs of structure



Photograph 239: General view of anti-vandal fencing to top of deck



Photograph 240: General view of palisade fencing to west end of top of deck