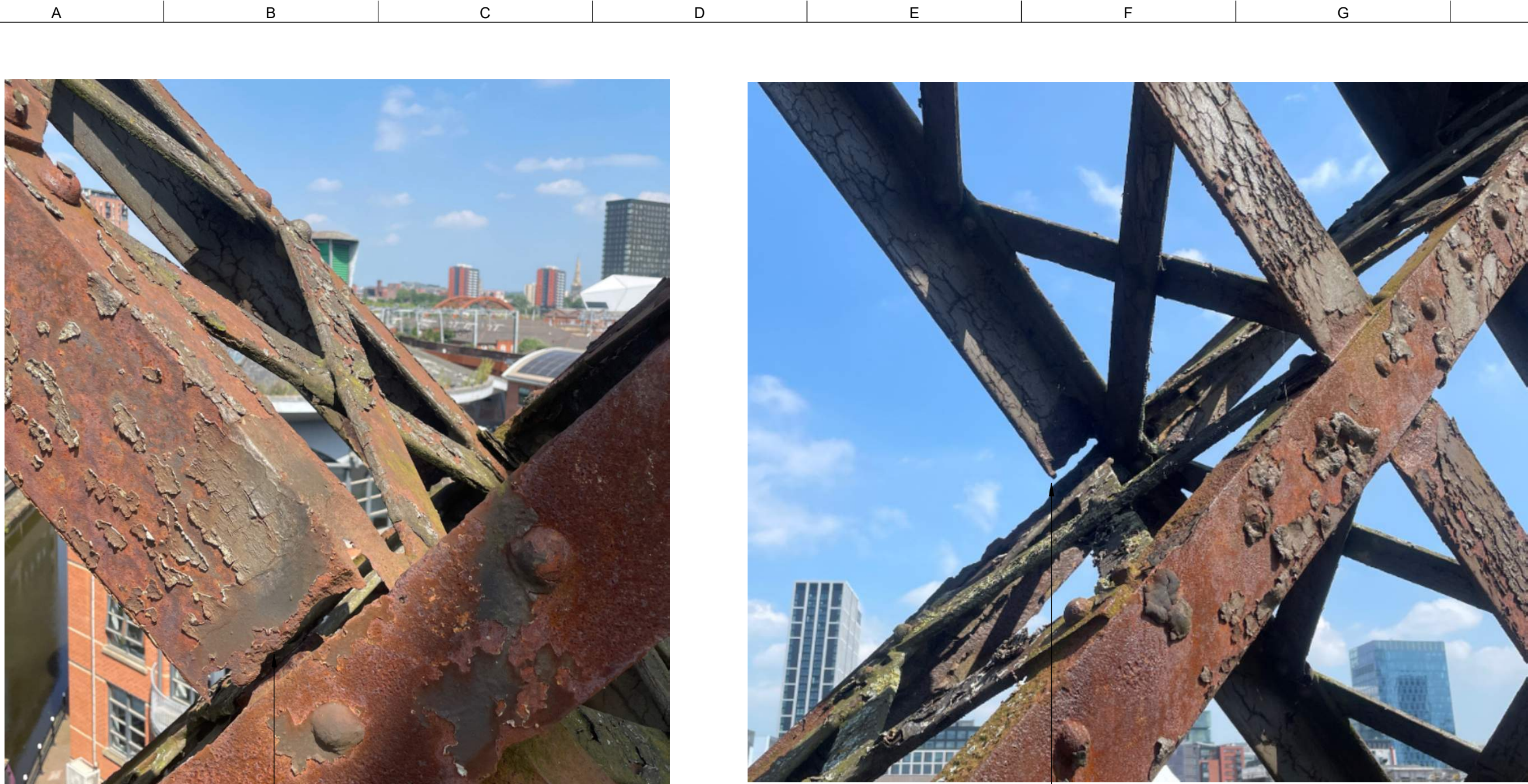


A1
1
2
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11



Example 1
- almost complete loss of section to lattice diagonal on deck side (specifically inner plate 2 according to nomenclature on drawing CVI-ARUP-ZZ-ZZ-DR-S-1055)
- affected diagonal is a continuous angle section running through the intersection
- other diagonal is a rivetted built-up angle (flat to outside with smaller rivetted angle within)

Example 2
- similar to Example 1 but with diagonal on outer side (specifically outer plate 2 according to nomenclature on drawing CVI-ARUP-ZZ-ZZ-DR-S-1055)
- affected diagonal is a continuous angle section running through the intersection



Example 3
- loss of section across less than 50% length of angle web
- pitting and loss of thickness elsewhere



Example 4
- loss of section only on short length of angle web
- pitting and loss of thickness elsewhere



Example 5
- no remedial required in this example, but shows different configuration with both diagonals being formed from rivetted built-up angles

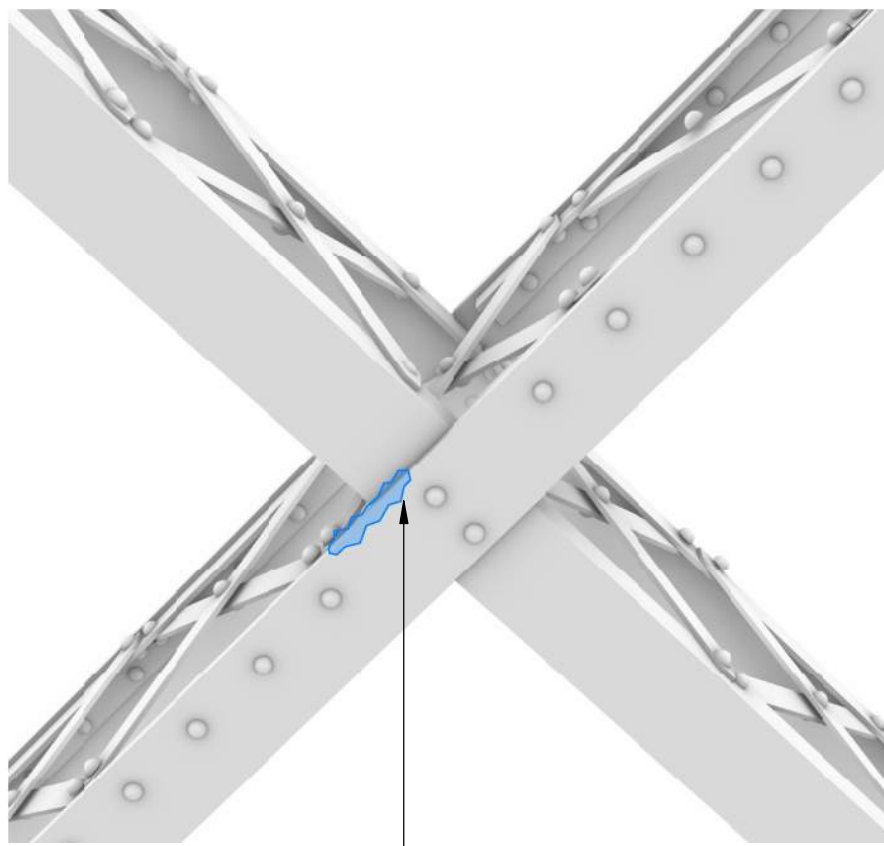


Example 6
- no remedial required in this example, but shows different configuration with one diagonal as flat, other diagonal as rivetted built-up angle
- note no cross bracing for diagonals with flats only

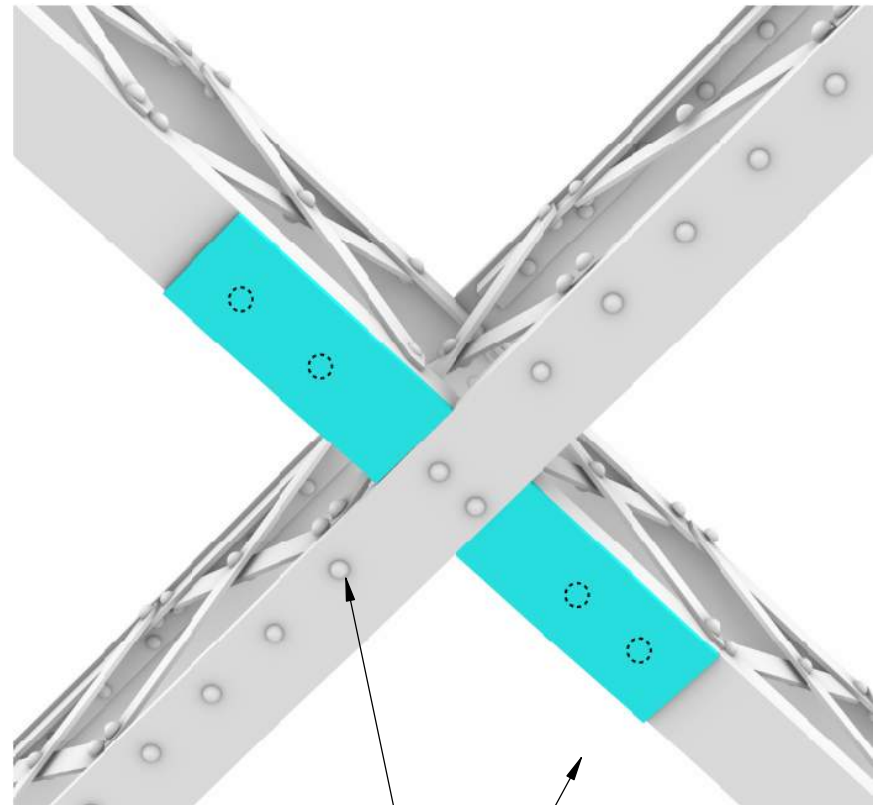
DEFECT EXAMPLES

NTS

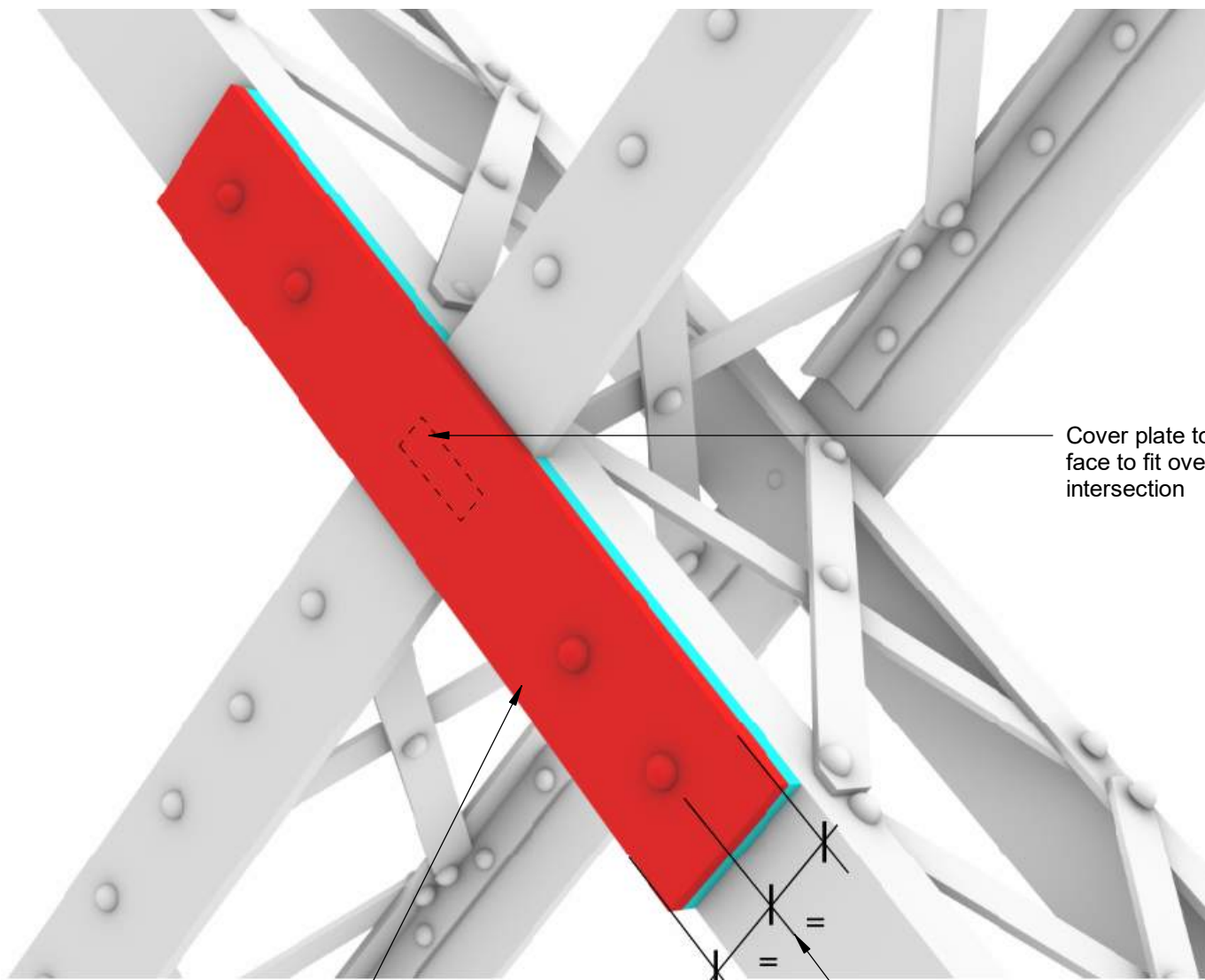
NOTE:
Defect examples taken from Arup 2024 visual surveys. Each represents a discrete example at a unique diagonal. Defect locations to be identified by re-survey.



Step 1
- assumed area of damage to continuous non-rivetted diagonal, at or near intersection
- corroded sections to be cleaned back to sound metal prior to repair
- no damage assumed to opposite diagonal

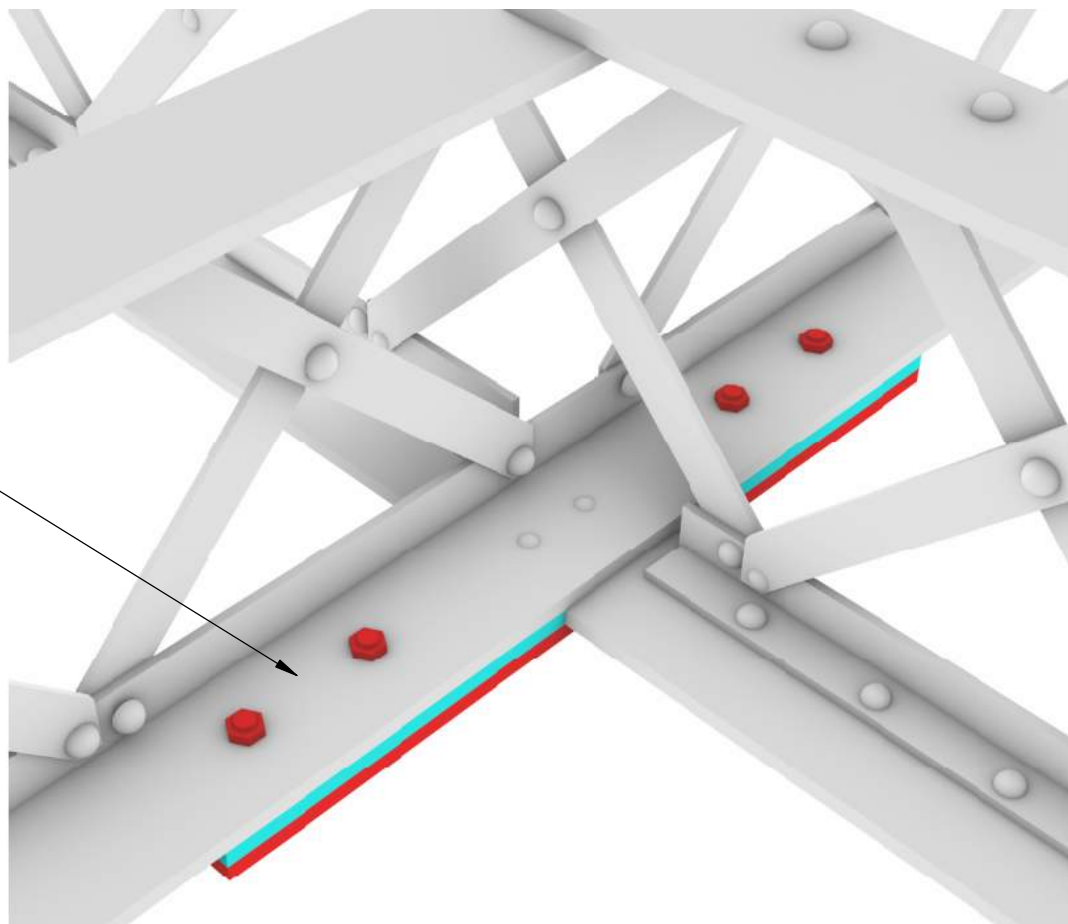


Step 2
- steel packing plates to same thickness and width as inner 1 plate
- 24mm dia holes drilled through corroded diagonal, using packer as template



NOTE:
Lattice diagonal section sizes and configurations vary between spans and along each span. Remedial drawn for generic example at intersection between 1No. rivetted built-up section (flat plus angle) and 1No. continuous angle.

Step 3
- steel cover plate to same thickness and width as corroded inner 2 plate. Approx lengths as shown.
- to be bolted into existing diagonal with M22 HSFG dome-headed bolts, 2No. each side of connection as shown



REMEDIAL DETAIL

NTS

- Notes:
- These drawings shall be read in conjunction with all relevant Engineer's and Architect's drawings and with all relevant specifications
 - Existing condition drawn with dimensions from original archive drawings. All existing dimensions to be verified by the Contractor prior to fabrication or construction.
 - Drawing to be read in colour.
 - Do not scale from this drawing
 - For structural nomenclature refer to drawing CVI-ARUP-ZZ-ZZ-DR-S-1055. For structural notation of spans/beams/piers refer to drawing CVI-ARUP-ZZ-ZZ-DR-S-1056

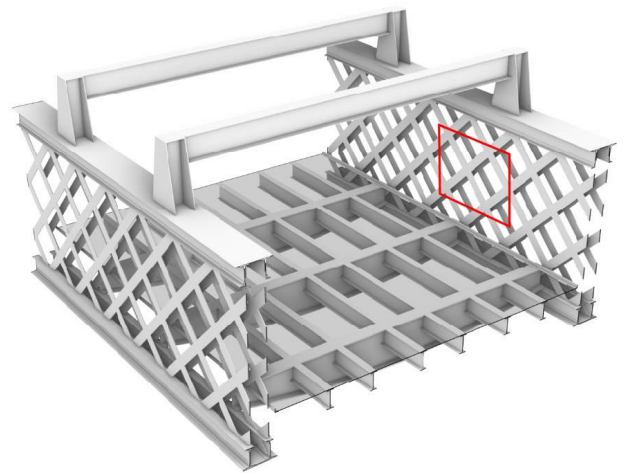
- H&S / CDM Risks:**
- Specific risks highlighted thus:
- existing paintwork contains lead
 - limited structural capacity of viaduct deck plates
 - existing ballast contaminated with lead and hydrocarbons
 - working at height above water and public areas
- Refer to Arup risk register for further details.

- Legend:**
- Existing structure
 - unchanged unless noted otherwise
 - Proposed remedial
 - Indicative extent of defect
 - typical loss of section or thickness due to corrosion
 - Indicative packing plates
 - where required

NOTE:
The remedial details shown consider the most likely corrective intervention based on the expected type/extent of defect. Extent of defect to be confirmed pending future brush down, removal of debris, and subsequent tactile surveys. Further defect types and consequent remedials may also be identified.

- LOCATION / NUMBER OF REMEDIALS REQUIRED:**
- TBC
 - Refer to general notes drawing CVI-ARUP-ZZ-XX-DR-S-0001 for background context for proposed remedials

KEY PLAN:



T1	14/08/24	RR	GH	Preliminary Issue
Rev	Date	Chkd	Appd	Issue Notes

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Client
The National Trust

Project Title
Castlefield Viaduct
Phase 2

Drawing Title
Remedials
Lattice Girders
Diagonal Intersections

Scale at A1	1 : 100	Drawn By	Author
Role	Structural	Status	S2 - For Information
Arup Job No	282210	Rev	T1
ID	CVI-ARUP-ZZ-ZZ-DR-S-4011		