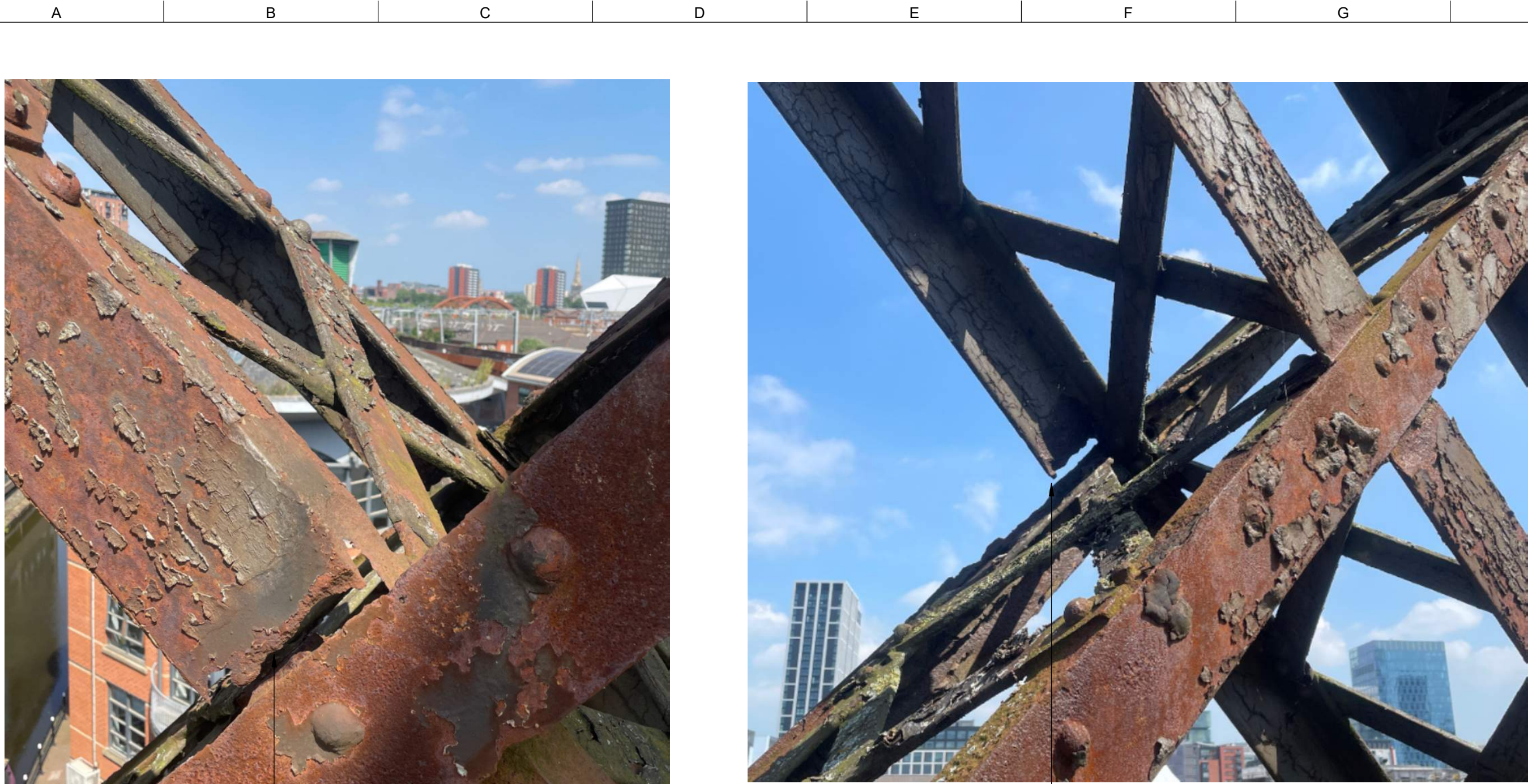


A1
1
2
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4
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6
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8
9
10
11



- 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

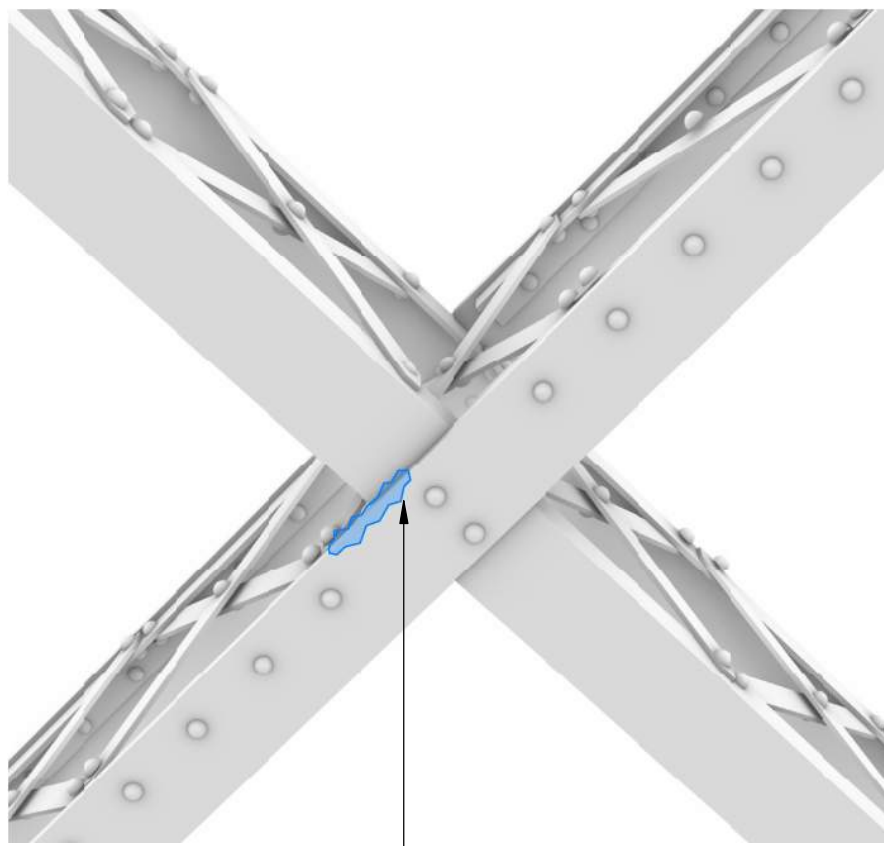


- Example 6**
- no remedial required in this example, but shows different configuration with one diagonal as flat, other diagonal as rivetted built-up angle
- note no cross bracing for diagonals with flats only

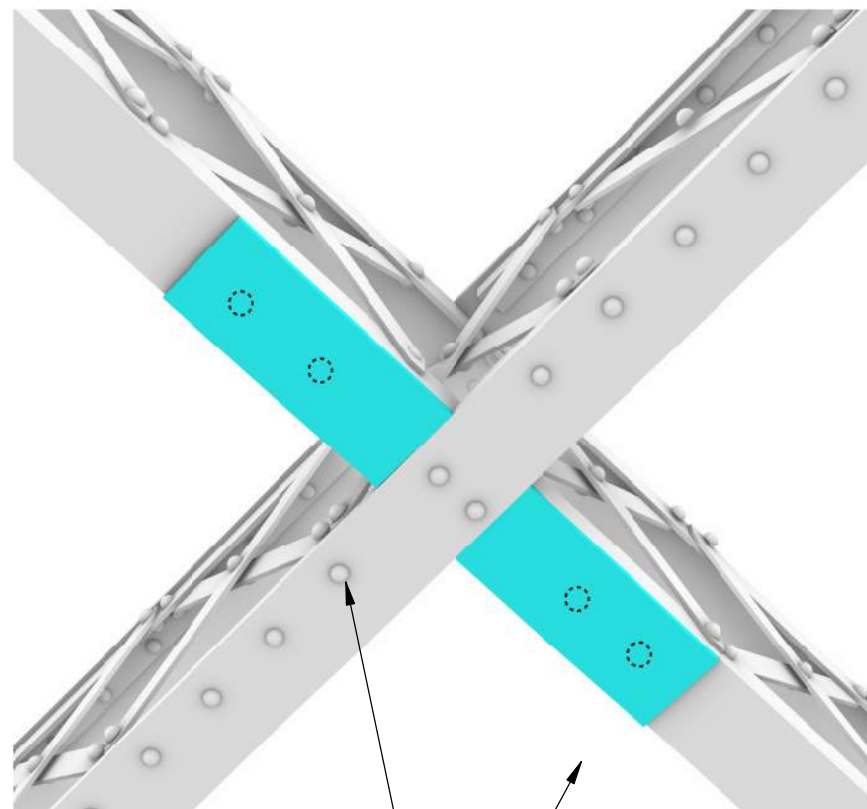
DEFECT EXAMPLES

NTS

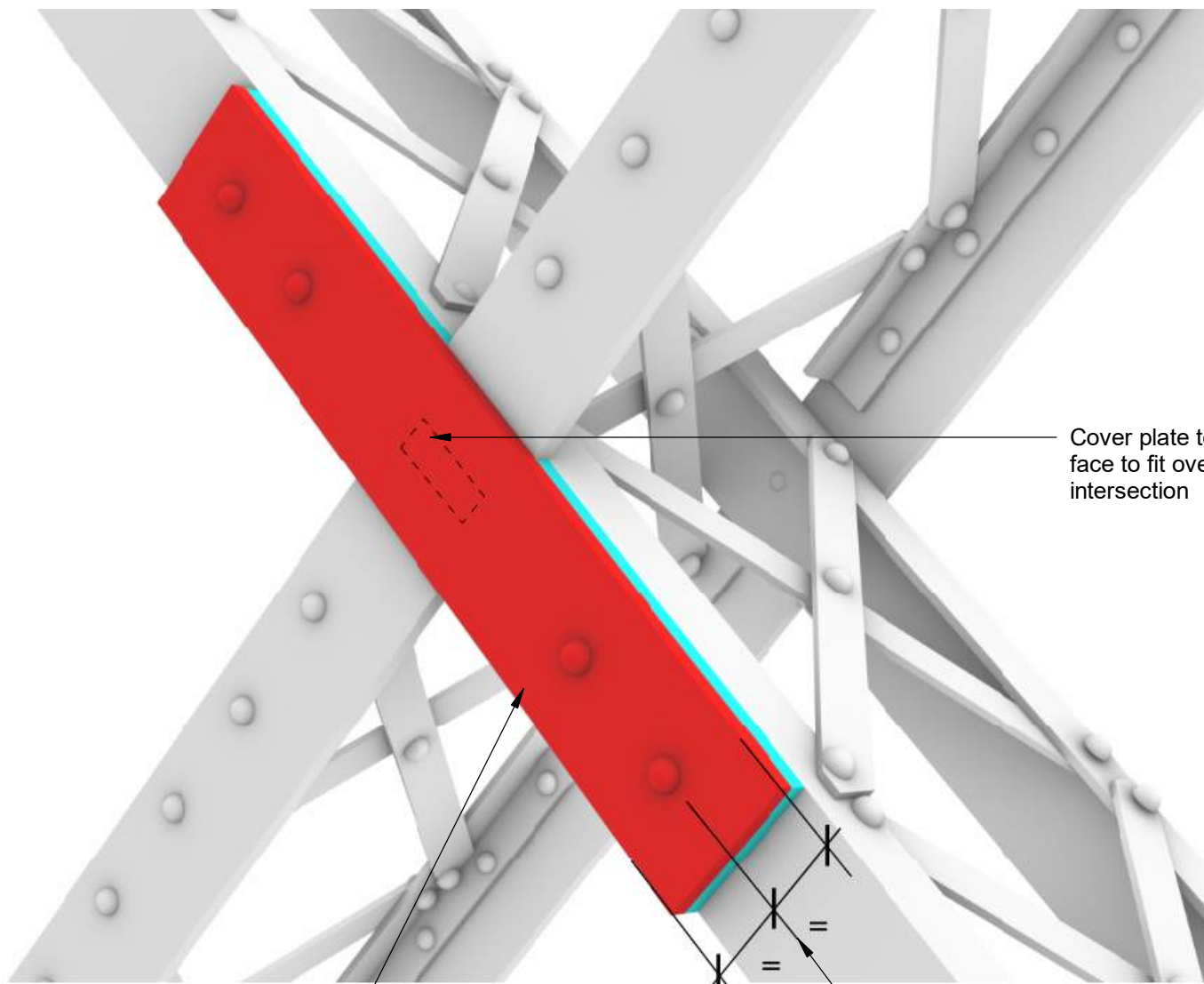
NOTE:
Defect examples taken from Arup 2024 visual surveys. Each represents a discrete example at a unique diagonal. Defect locations to be identified by re-survey.



- 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

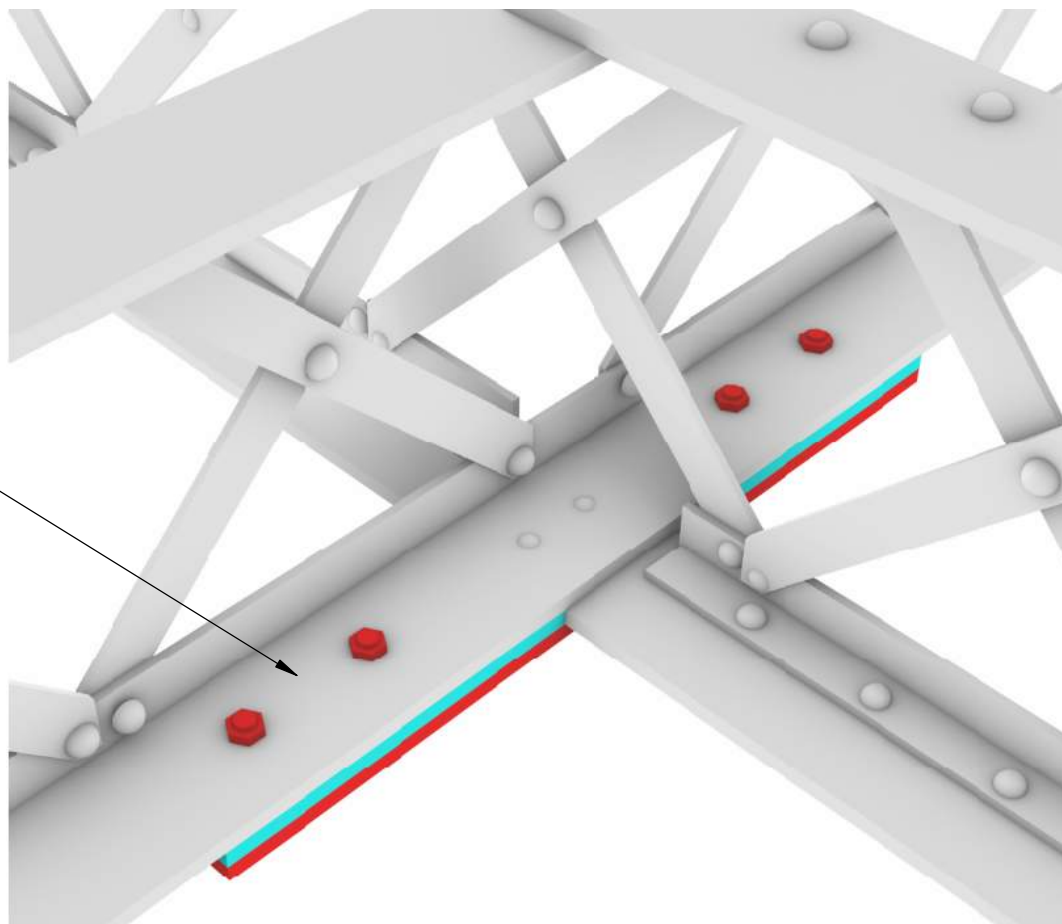


- Step 2**
- steel packing plates to same thickness and width as inner 1 plate
- 24mm dia holes drilled through corroded diagonal, using packer as template



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

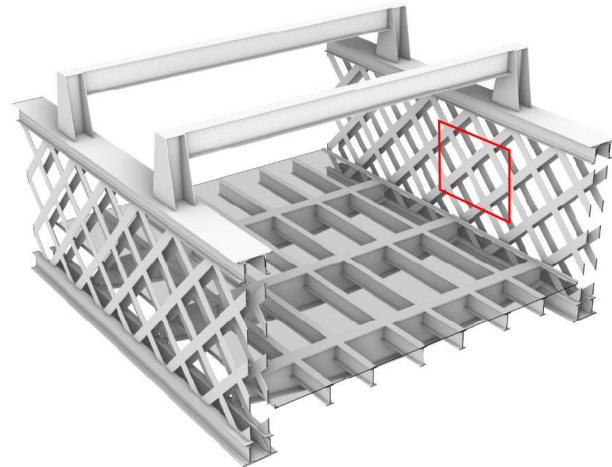
NOTE:

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		