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A B C D E F G H I J K L M N

Example 1



Longitudinal beam
- 1/2" thick web plate
- 4.5" x 4.5" x 5/8" angles each side of web, top and bottom

Deck plate
- 3/8" thick

Water ingress at presumed local failure to deck waterproofing

Vertical angles at end connection of longitudinal beam into transverse beam

Corrosion and loss of thickness to bottom flange

Transverse beam
- 1/2" thick web plate

Bearing stiffener under longitudinal beam
- 1/2" thick
- Connected into transverse beam with 4" x 3" x 0.5" angles each side

Example 2
- from Balfour 2020



Transverse beam 19, Cornbrook elevation

Example 4



Longitudinal beam top angles kinked around angles to transverse beam

Corrosion and loss of thickness to web plate

Example 3



Longitudinal beam spacing varies
- 5' or 6' according to archive drawings

Example 5



Longitudinal beam 2

Water ingress at presumed local failure to deck waterproofing

Deck plate stiffener

Possible loss of section to bottom flange

Example 6
- from Balfour 2020



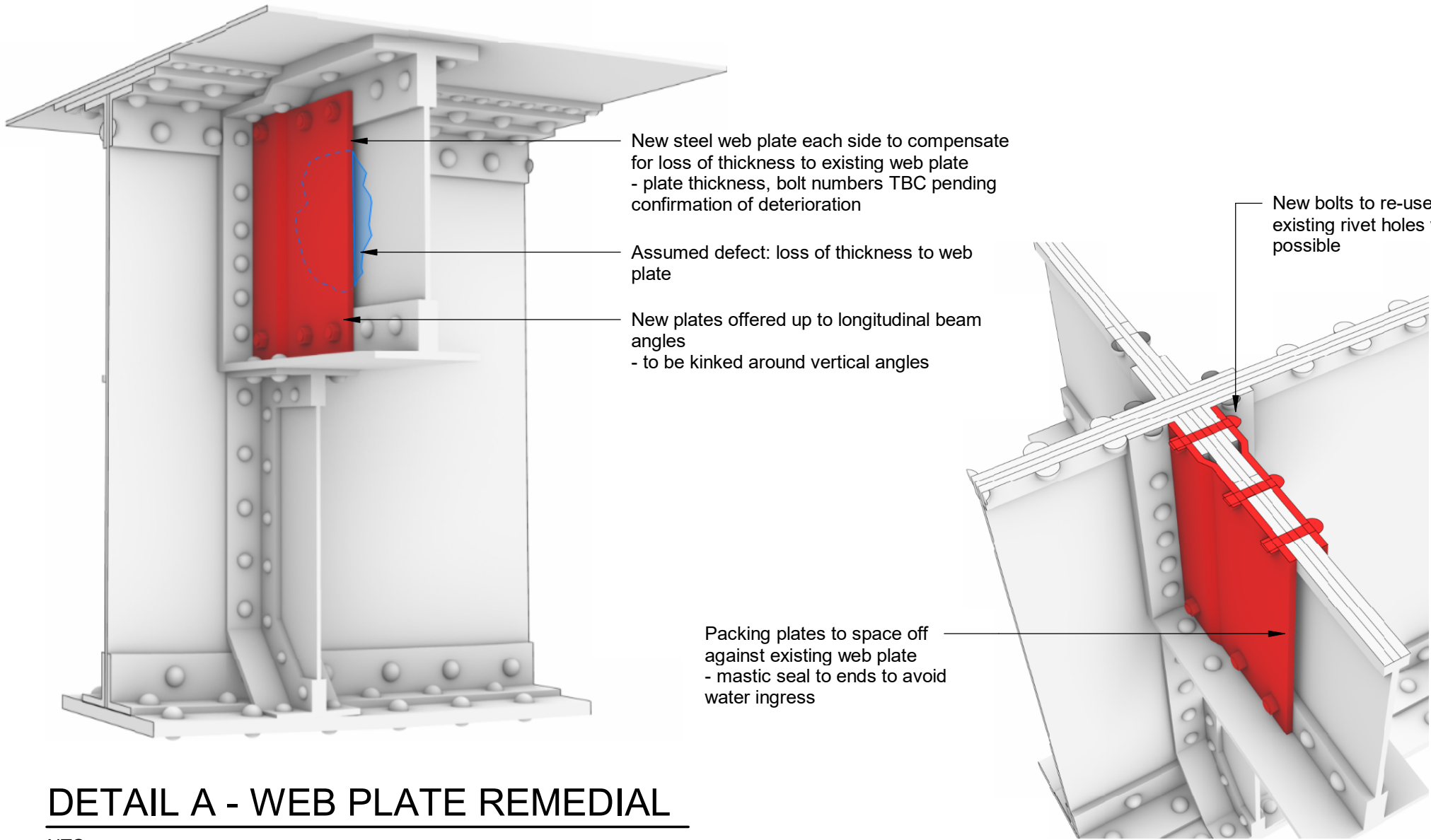
Loss of section to bearing stiffener

Transverse beam 21, Deansgate elevation

DEFECT EXAMPLES

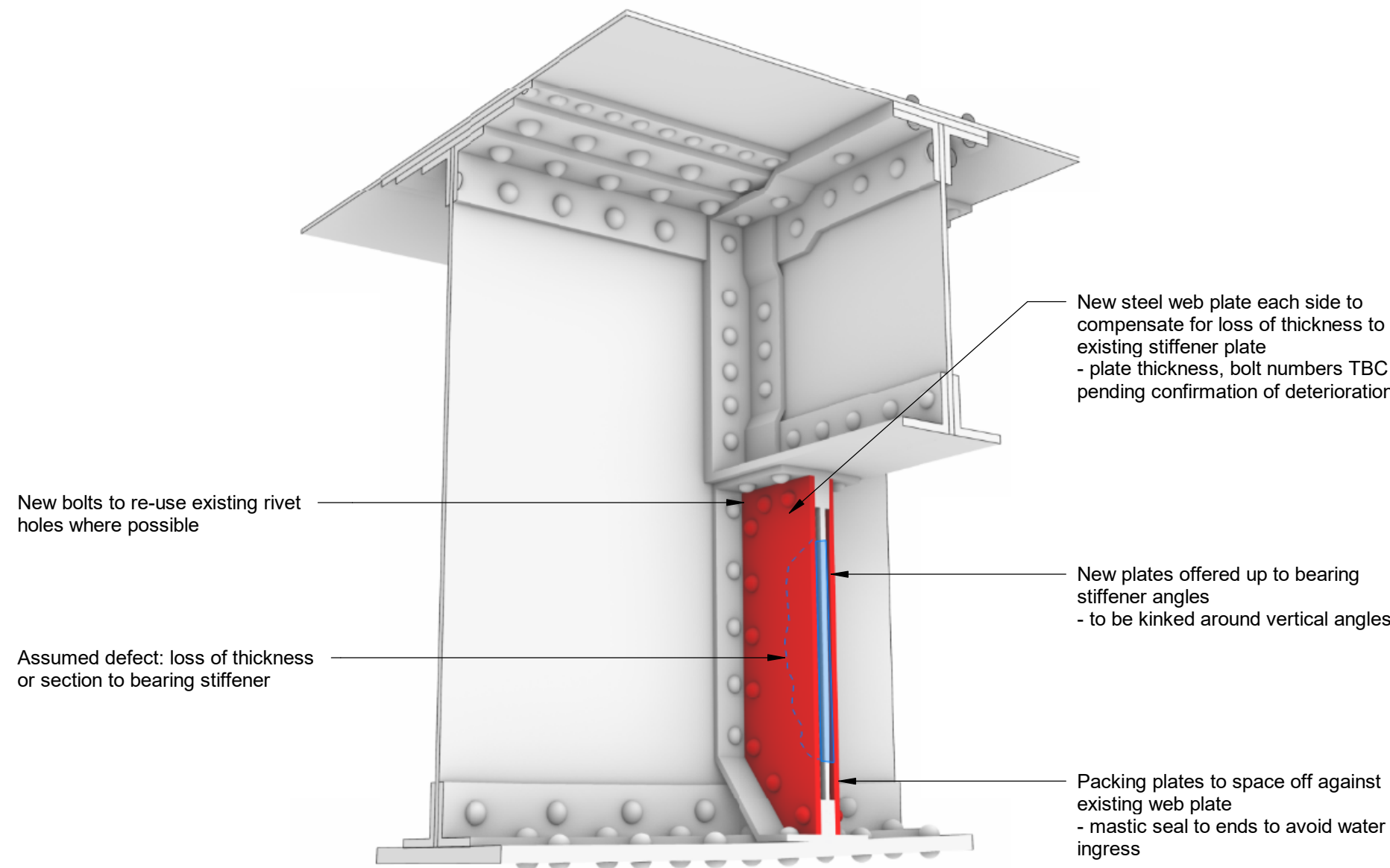
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NOTE:
Defect examples taken from Arup 2024 MEWP survey (covering spans 2-4 inclusive) and Balfour 2020 survey (covering spans 2-8 inclusive). Each represents a discrete defect for a unique beam. Defect locations to be identified by re-survey.



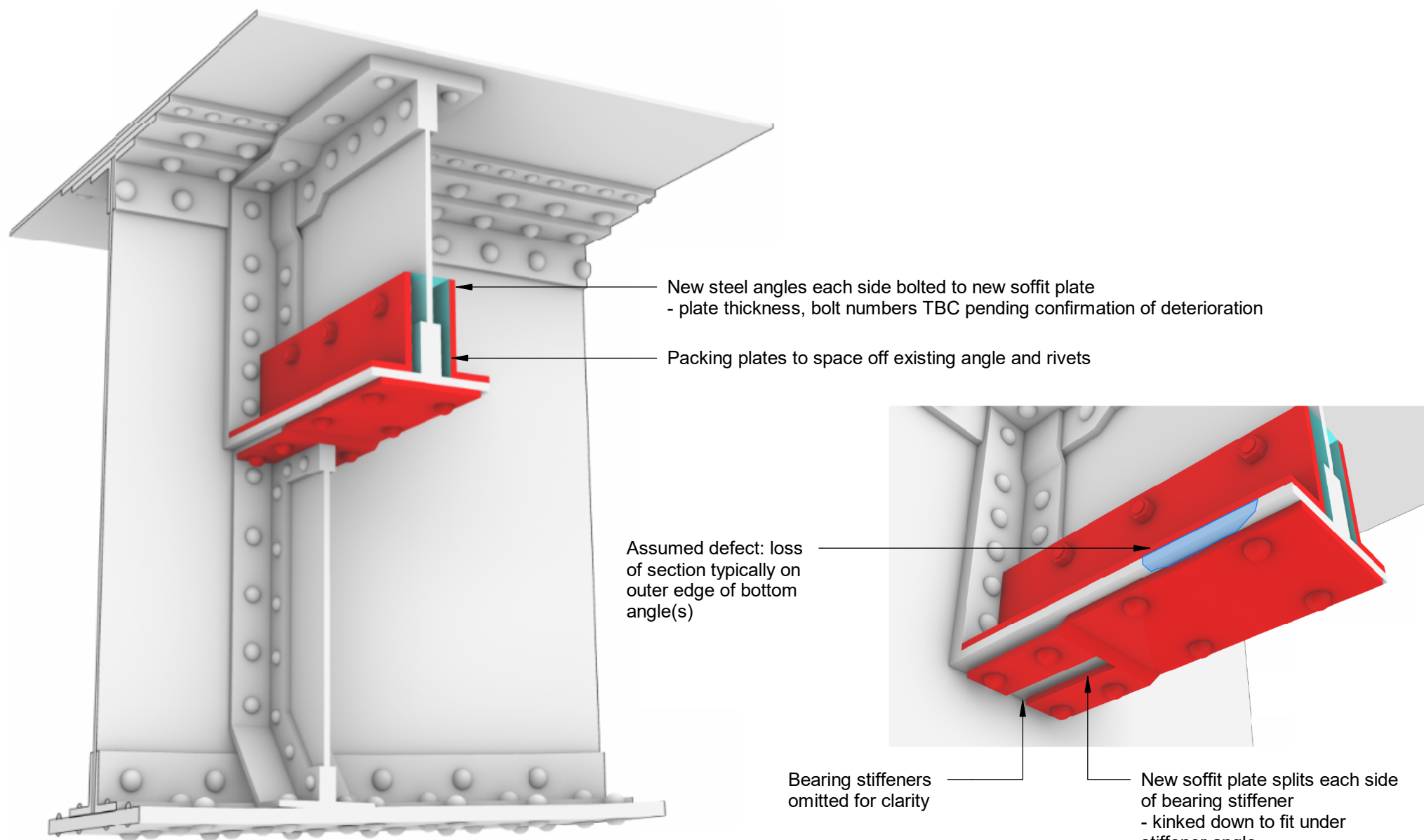
DETAIL A - WEB PLATE REMEDIAL

NTS



DETAIL B - STIFFENER REMEDIAL

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DETAIL C - BOTTOM FLANGE REMEDIAL

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

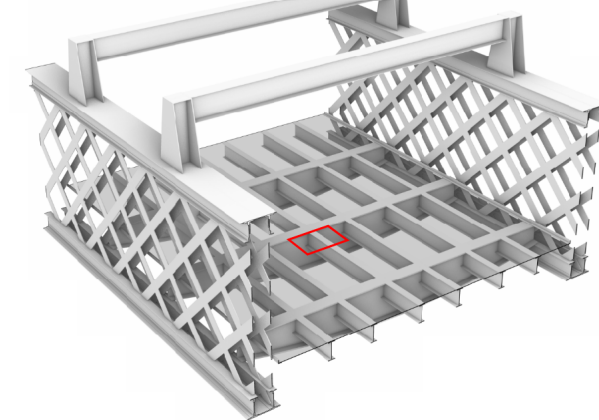
NOTE:

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
Longitudinal Beams
End Connections

Scale at A1	1 : 100	Drawn By	Author
Role	Structural	Rev	T1
Status	S2 - For Information	Arup Job No	282210
ID	CVI-ARUP-ZZ-ZZ-DR-S-4005		