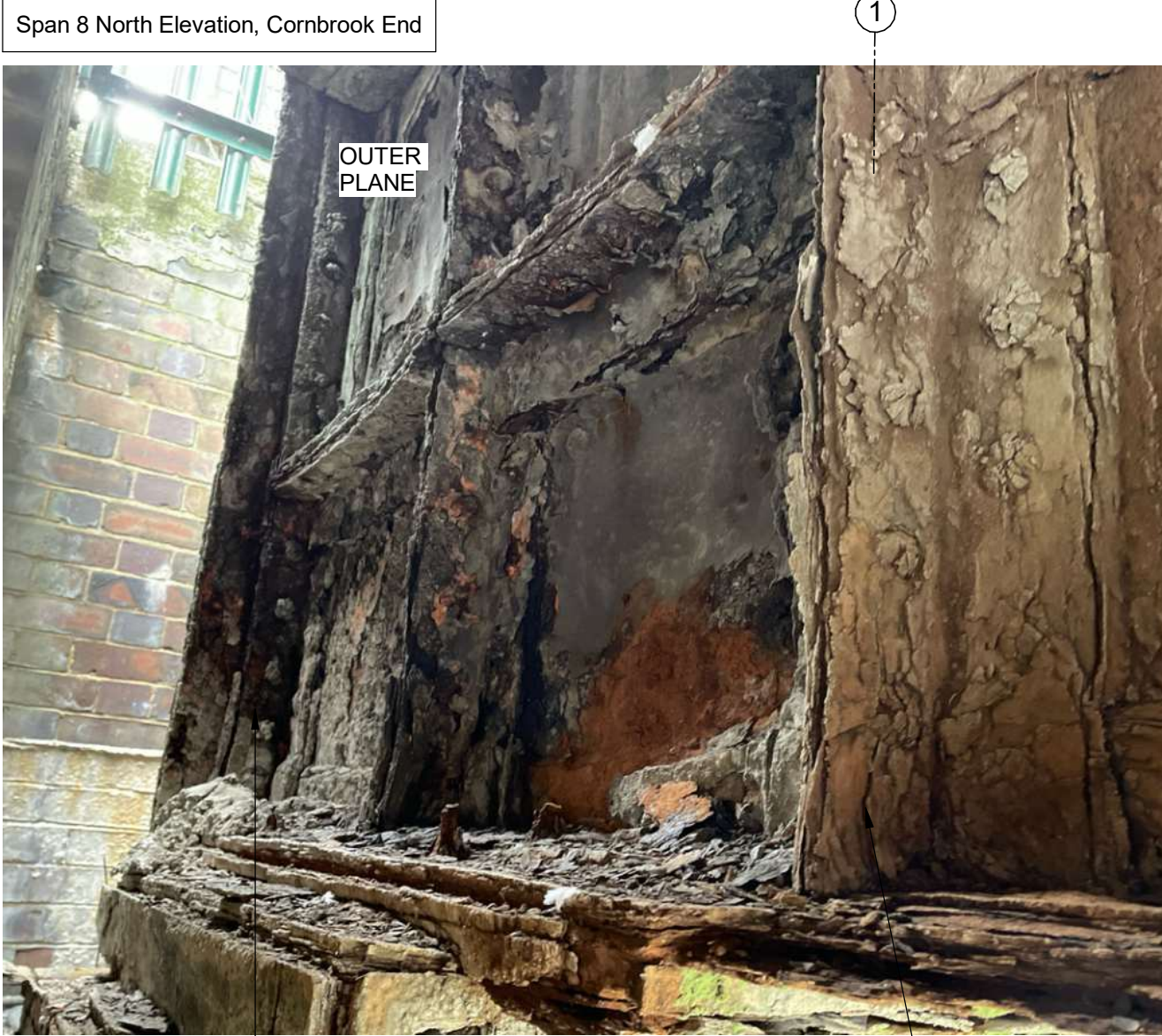




Span 7 North Elevation, Cornbrook End

Debris at pier head to be cleared to confirm extents/condition of bottom horizontal stiffener on GL A

Holes on both lower web panels, inner plane



Span 8 North Elevation, Cornbrook End

OUTER PLANE

Note: this is at the Cornbrook abutment; access further constrained by surrounding masonry bearing gallery

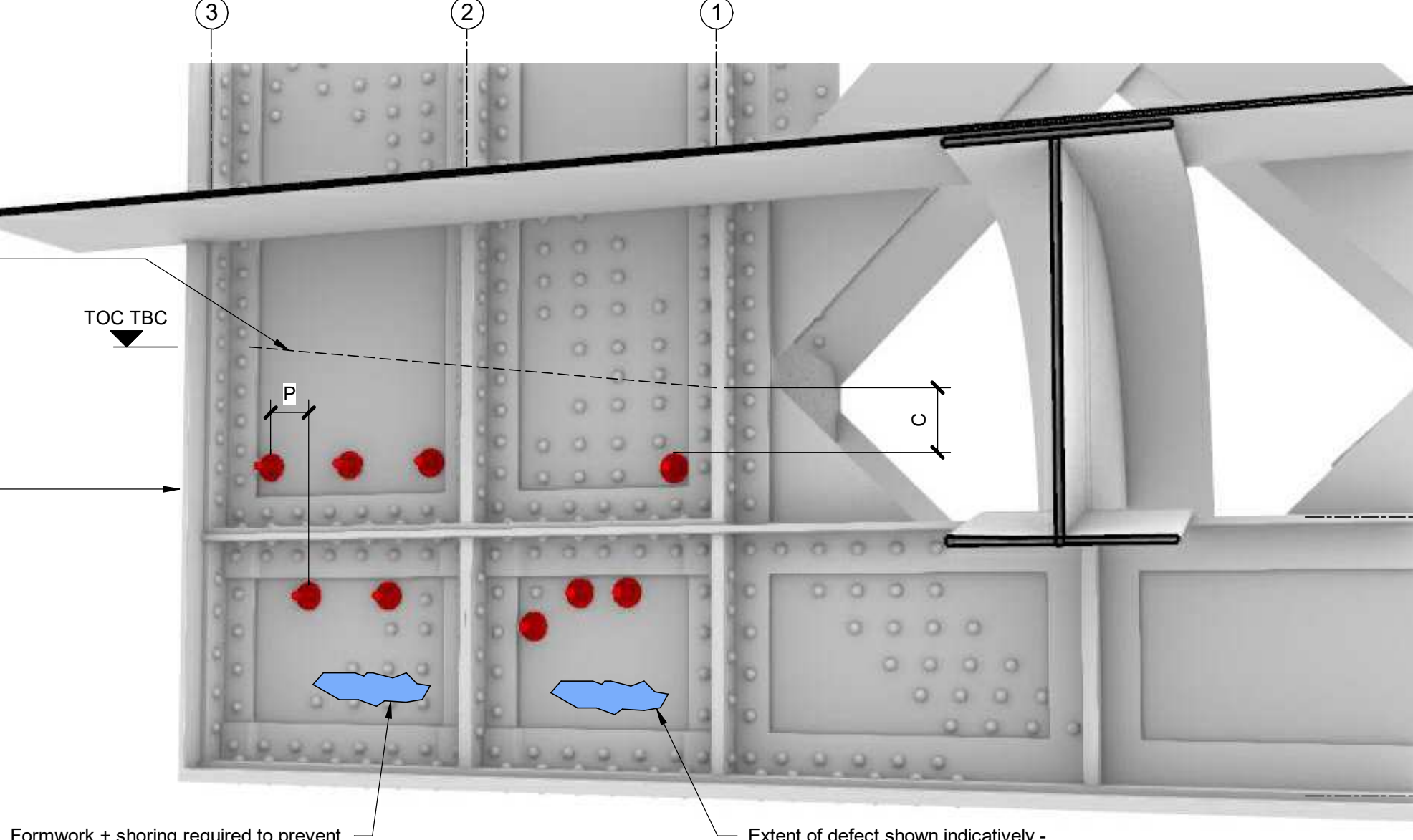
Configuration of existing bearing to be reviewed pending further debris clean and tactile survey

Concrete infill within support box

- to extend to front of box in line with flange of vertical stiffener on GL 1
- to be poured directly against internal face of existing steel (post-cleaning and painting)
- infill to fall at 1:40 from GL 3 to GL 1
- TOC TBC - dependent on minimum cover C (100mm) to confirmed through bolt positions. Assume approx 1.5m³ concrete required typically.
- note: two pours may be required if the compression diagonal solid plate bisects the support box volume. Diagonal geometry varies on a location-by-location basis, to be confirmed by further tactile survey.

Through bolts from inner to outer planes

- M27 bolts (or threaded rod) between each face, with 50dia x 4thk washers
- bolts to be at approx 125mm c/c horizontally (pitch P) on a single horizontal row where possible, or staggered vertically (as shown) to avoid:
 - thin sections of existing steel
 - diagonals within boxes (and their rivets)
- bolt positions to be confirmed per location following further tactile survey. Bolts to not be positioned above deck level.
- black bolts assumed, in standard clearance bolt holes each side.



Formwork + shoring required to prevent concrete leakage through holes.

Extent of defect shown indicatively - to be verified by further tactile survey post-cleaning and debris removal.

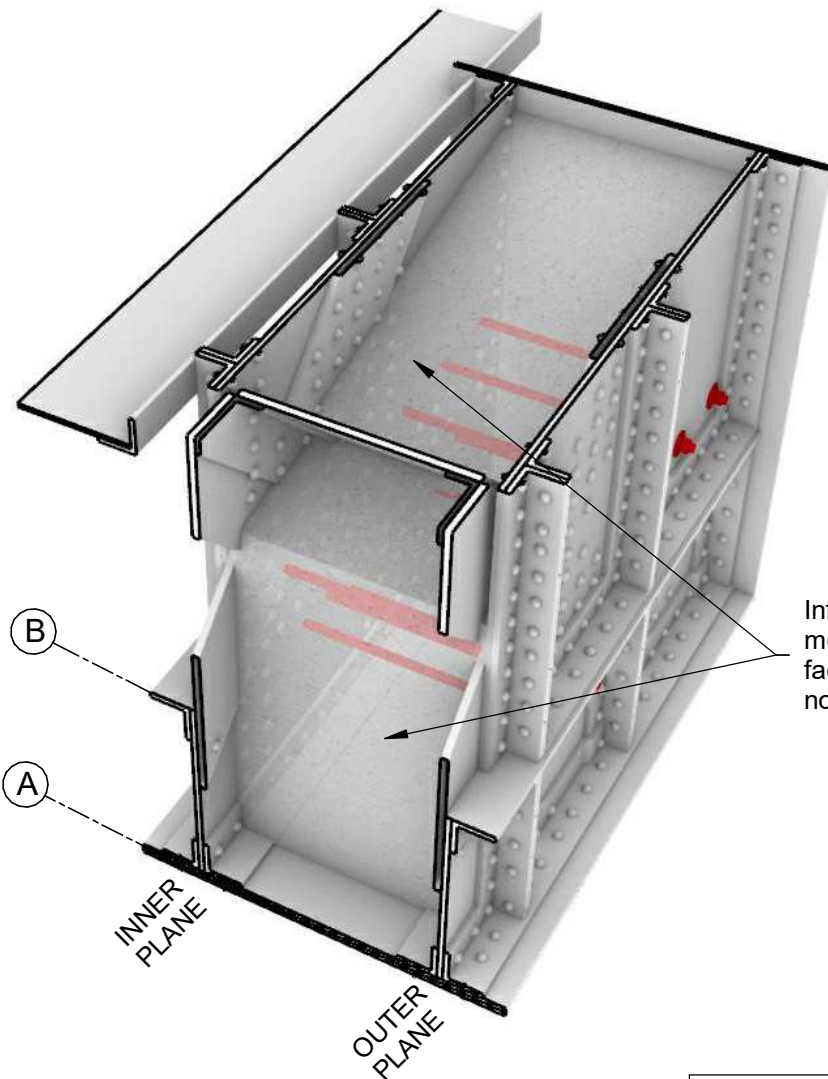
Span 4 South Elevation, Cornbrook End



Purpose of rivets likely for connection of incoming transverse beam

Note GL 1 vertical stiffener not supported on bearing - extents of bearing TBC pending further debris clean and tactile survey

Purpose of rivets TBC: potentially for cross stiffener within box

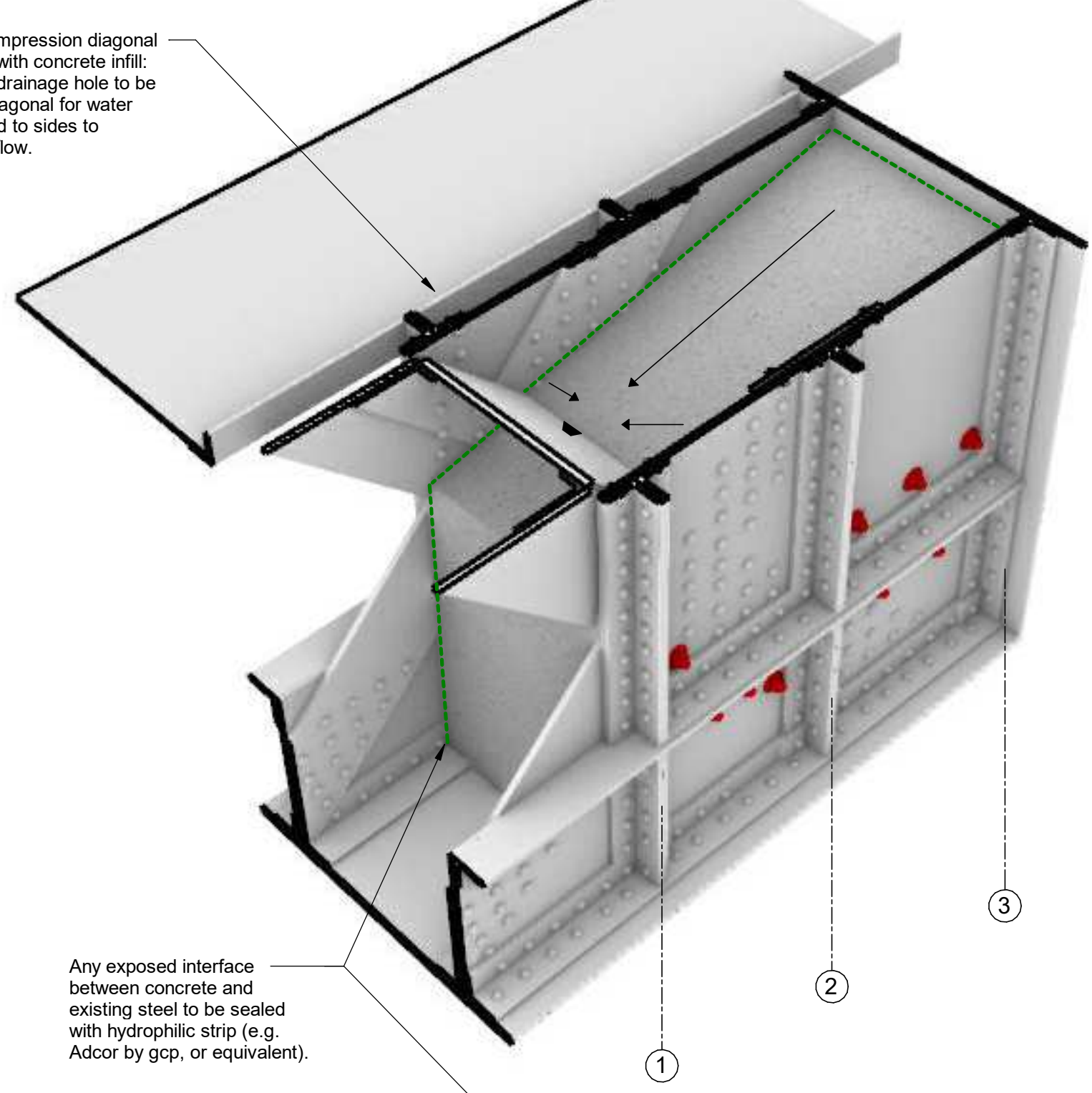


Infill to be reinforced with A393 mesh to externally visible faces only - minimum 50mm nominal cover

Assumed sequence:

- 1 - hole for 1st bolt drilled into either inner or outer plane (leading hole)
- 2 - small diameter drill uses leading hole for a pilot hole in opposite plane, ensuring holes are aligned vertically / horizontally
- 3 - pilot hole enlarged on opposite plane
- 4 - 1st bolt installed and loosely tightened
- 5 - repeat for all bolts
- 6 - infill concrete poured
- 7 - bolts fully tightened

Any exposed interface between concrete and existing steel to be sealed with hydrophilic strip (e.g. Adcor by gcp, or equivalent).

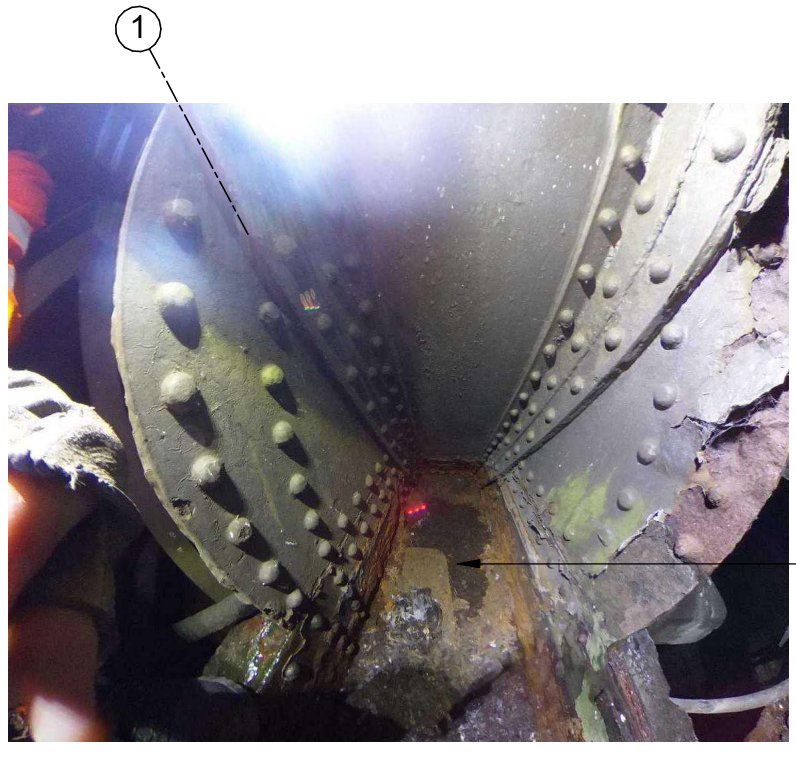


Span 4 South Elevation, Cornbrook End



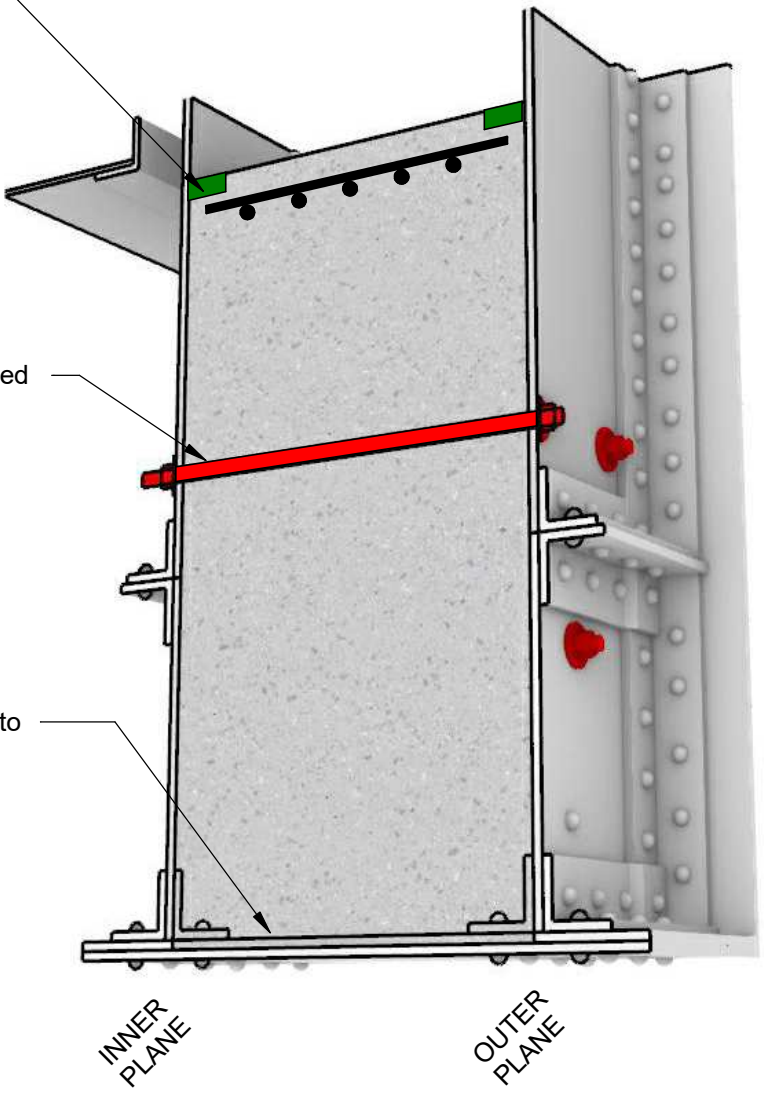
Span 4 South Elevation, Cornbrook End

Horizontal hole to lower web panel, outer plane - extents of remaining sound steel to be reviewed pending further tactile survey



Concrete to be adequately compacted to ensure flow around bolt.

Debris in the bottom of support box to be removed, existing bottom plate exposed/cleaned/painted.



DEFECT EXAMPLES

NTS

REMEDIAL DETAIL

NTS

NOTE: Existing structure assumed blasted, cleaned and re-painted prior to remedial installation. Refer to Proposed Remediation Schedule on sketch CVI-ARP-ZZ-ZZ-SK-S-3033.

NOTE: Rivet numbers and sizes shown indicatively. Typically assumed 7/8" (22.2mm) shank with holes (1/16" 1.6mm) greater than shank. Rivet heads assumed to project approx 20mm beyond face of connected plates.

NOTE: Drawn for notional typical condition along viaduct. Other conditions vary according to configuration of transverse beams and incoming diagonals. Abutment condition follows similar arrangement in principle.

Notes:

1. These drawings shall be read in conjunction with all relevant Engineer's and Architect's drawings and with all relevant specifications.
2. Existing condition drawn with dimensions from original archive drawings. All existing dimensions to be verified by the Contractor prior to fabrication or construction.
3. Drawing to be read in colour.
4. Do not scale from this drawing
5. 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

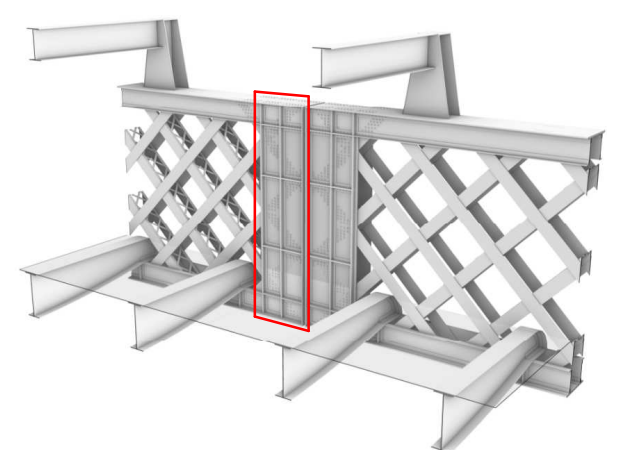
NOTE:

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 special inspection. Refer to the Truss End Support Boxes Remediation Schedule (sketch CVI-ARUP-ZZ-ZZ-SK-S-3033) for proposed action per each support box.

LOCATION / NUMBER OF REMEDIALS REQUIRED:

- 9No. required as below:
 - Span 4 - North elevation, Deansgate end
 - Span 4 - South elevation, Deansgate end
 - Span 4 - South elevation, Cornbrook end
 - Span 5 - South elevation, Cornbrook end
 - Span 7 - North elevation, Cornbrook end
 - Span 8 - North elevation, Deansgate end
 - Span 8 - North elevation, Cornbrook end
 - Span 8 - South elevation, Deansgate end
 - Span 8 - South elevation, Cornbrook end
- Refer to Arup Principal Inspection & Assessment CVI-ARUP-ZZ-ZZ-RP-S-000001 for further background.

KEY PLAN:



T1	19/09/25	RR	GH	Updated post - hand-dug trial pits
Rev	Date	Chkd	Appd	Issue Notes

ARUP

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Client
The National Trust

Project Title
Castlefield Viaduct
Phase 2

Drawing Title
Remedials
Truss End Supports
Concrete Infill Remedial

Scale at A1 As indicated Drawn By EJM

Role Structural

Status S2 - For Information

Arup Job No
282210

Rev
T1

CVI-ARUP-ZZ-ZZ-DR-S-4019