

BROCKWEIR BRIDGE METHOD STATEMENT

1. Introduction

Brockweir Bridge is a road bridge consisting of three simply supported spans of early steel longitudinal lattice girders supporting transverse 'I' section girders sitting on the lower flange of the main girders. Dished wrought iron floor plates span between the transverse girders and support the concrete infill deck, carriageway surfacing and narrow verges.

The carriageway across the structure is approximately 65.0m in length and 5.5m in width, kerb to kerb, with narrow concrete verges and drainage gullies located along the south kerb line.



Figure 1: Brockweir Bridge Carriageway Surfacing

Following the General Inspection conducted in January 2025, it was reported that the carriageway surfacing is in very poor condition. There are significant areas of potholes, patching, and loose grit accumulation along the edges of the carriageway throughout the entire length of the bridge and its approaches. Additionally, the gullies on the south side of the carriageway are mostly blocked with silt. Furthermore, the asphalt plug joints at the abutments show minor debonding and cracking.

It is also assumed that the waterproofing has failed. Records indicate that the fabricated sheet waterproofing was installed in 1986, and there is no record of it being replaced since. Therefore, it is operating well beyond its service life.

2. Location Details

Brockweir Bridge is a road bridge crossing the River Wye, which links the village of Brockweir in the Forest of Dean, Gloucestershire, on the east side of the river to the A466 Monmouthshire on the west side of the river.

Easting: 353872

Northing: 201132

What3Words location: smug.encoding.slippers

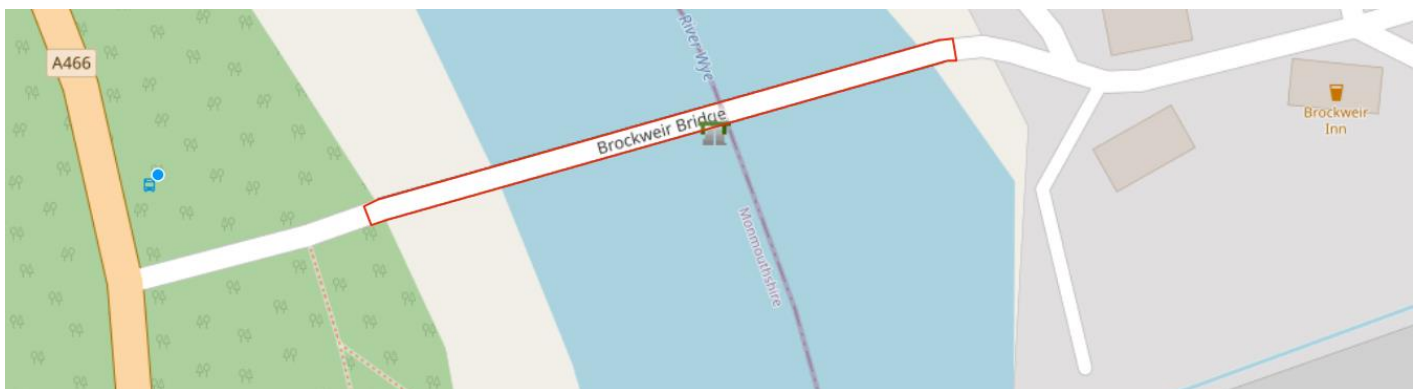


Figure 2: Map showing the area in which the proposed permanent works and temporary safety measures will be undertaken

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The set of latitude and longitude coordinates encompassing the entirety of the bridge deck where the proposed works and any temporary safety measures, such as debris netting in the parapets, are shown below,

Latitude	Longitude	Description
51.707130	-2.6685002	Near the approach on the Northeast Abutment
51.707064	-2.6688610	Over the Northeast Pier
51.707007	-2.6691641	Over the Northwest Pier
51.707007	-2.6695114	Near the approach on the Northwest Abutment
51.706887	-2.6694779	Near the approach on the Southwest Abutment
51.706949	-2.6691265	Over the Southwest Pier
51.707004	-2.6688194	Over the Southeast Pier
51.707068	-2.6684734	Near the approach on the Southeast Abutment

3. Description of Activity

The scope of work includes,

- Undertaking three trial holes 500 x 500 depth down to the top of the waterproofing system on the concrete deck.
- Cleansing of the deck drainage system to maintain functionality.
- Replacement of the buried expansion joints at piers and asphaltic plug joints at abutments (Verge areas are not included).
- Full replacement of the waterproofing and carriageway surfacing for the full length of the structure (Verge areas are not included).

4. Proposed Methodology

The work will be completed in two phases: Phase 1, Trial Hole Investigation, and Phase 2, Resurfacing of the Carriageway and Replacement of Expansion Joints.

Phase 1: Trial Hole Investigation

- Three trial holes 500mm x 500mm down to the top of the waterproofing system on the concrete deck are to be undertaken in the proposed areas as shown in DWG. 5228526-ATK-SBR-B526-DR-CB-000001, to confirm the existing carriageway surfacing depths. Exact locations are to be confirmed on-site prior to work.
- The trial holes will be utilised to undertake an Asbestos Refurbishment & Demolition Survey.
- Bituminous mixtures are to be used to resurface the areas in which trial hole investigations were undertaken.

Length of Work	1 day
Proposed Traffic Management	Full Road Closure
Detail of material removed	Carriageway surfacing material (Bituminous Mixture)
Detail of material deposited	Carriageway surfacing material (Bituminous Mixture)

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Phase 2: Resurfacing of the Carriageway and Replacement of Expansion Joints

The proposed methodology to undertake works in this phase is as follows. A sketch of the phasing plan for resurfacing the carriageway is shown in DWG. 5228526-ATK-SBR-B526-DR-CB-000003.

- Removal of existing carriageway surfacing (plane off road surfacing), existing waterproofing system, buried expansion joints at piers and asphaltic plug joints at abutments.
- Any concrete defects revealed following the removal of the waterproofing system are to be patch-repaired. Extensive concrete defects are to be marked up and returned at a later date, to allow a repair strategy to be produced.
- The deck drainage system present is to be cleansed.
- The deck is prepared for waterproofing.
- A buried expansion joint, which is incorporated into the waterproofing system, is installed at the piers to provide a watertight seal.
- A spray-applied system is used for waterproofing the deck.
- The carriageway is to be resurfaced following the tentative surfacing details shown in DWG. 5228526-ATK-SBR-B526-DR-CB-000002. The depth of surfacing proposed is susceptible to change based on the existing surfacing thickness obtained from the trial holes.
- Asphaltic plug joints (movement joints) are installed at both abutments.

An Indicative programme for the Phase 2 works is as follows,

Friday	18:00-20:00 – Install road closure and diversion.
	20:00-22:00 – Plane out.
Saturday	09:00-15:00 – Prep deck for waterproofing, cleanse through drainage system.
	15:00-21:00 – Concrete patch repairs to deck (if necessary).
Sunday	10:00-14:00 – Install buried joints at pier locations and apply waterproofing.
	14:00-19:00 – Resurface carriageway.
	19:00-22:00 – Install Asphaltic Plug Joints at abutment locations.
Monday	00:00 – Remove traffic management.

Length of Work	3 days
Proposed Traffic Management	Full Road Closure
Detail of material removed	Carriageway surfacing material (Bituminous Mixture), Existing Expansion Joints and waterproofing system.
Detail of material deposited	Spray-applied waterproofing, Expansion Joints installed at Piers and Abutments, Carriageway surfacing material (Bituminous Mixture)

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5. Safety Measures

- Proposed works are to be undertaken only in the carriageway area; no works are proposed in the kerbs.
- Works will be carried out in a controlled environment, with a single lane closure of the bridge implemented during phase 1 works and a total closure of the bridge implemented during phase 2 works.
- Safety measures such as debris netting are installed on parapets to encapsulate the work area.
- Spillage kits will be readily available on-site during the entire period of works.
- Traffic diversion routes are proposed with advance works signage installed prior to work commencement.

6. Material Handling

Construction materials will be transported to the bridge via tipper trucks or large goods vehicles by accessing the total closure. Minimal storage of materials on site will be required, as surfacing material will be laid as it arrives on site. Similarly, waterproofing and bridge expansion joint materials are stored in holding tanks on the trucks and are installed directly from these vehicles.