

**National Asset Delivery
Technical Surveys and Testing**

**Site Information for M5 J22-J33 River
Brue Bearings MP 182.80 -185.00, River
Brue and Huntspill River Bridges
PIN: 565232**

1 SITE INFORMATION

1.1 Site boundary, extents and access arrangements

River Brue Bridge (Figure 1) carries the M5 over the River Brue at marker post 182.80. The structure is at Ordinance Survey Grid Reference (OSGR) 332850, 146480, and is located to the east side of Walrow Industrial Estate. The bridge was constructed in 1973 and has a 5.72° skew. The bridge is a continuous three span structure. The deck is formed from precast prestressed concrete 'U' shaped beams which have a layer of insitu infill on the bottom flanges and a slab on top to form a voided structure. The total bridge deck consists of two separate structures, each supporting a carriageway, with the central reserve drainage system spanning in between. The whole area below the bridge, including the river invert and side slopes, has been covered with insitu concrete slabs. The bridge is supported at each end by cantilever wall abutments. Intermediate supports are provided by slab walls. The foundations are reinforced concrete pile caps on steel 'H' piles. The bridge is supported by 26 Bearings (4 sliding & 22 Free) on the north abutment and same on the south abutment. It has 14 bearings (2 fixed, 12 Sliding) on the north pier and 14 bearings (2 fixed, 12 Sliding) on the south pier.

Huntspill River Bridge (Figure 1) carries the M5 over the Huntspill River at marker post 185.00. The structure is at Ordinance Survey Grid Reference (OSGR) 332260, 144320, and is located to the east of West Huntspill. It was constructed in 1973 and has zero skew. The bridge is a continuous three span structure. The deck is formed from precast prestressed concrete U shaped beams which have a layer of insitu infill on the bottom flanges and a slab on top to form a voided structure. The total bridge deck consists of two separate structures, each supporting a carriageway, with the central reserve drainage system spanning in between. The spans are 19.50m, 24.0m and 19.50m. The overall width of the deck is 34.00m. The whole area below the bridge, including the river invert and side slopes, has been covered with insitu concrete slabs. The bridge is supported at each end by cantilever wall abutments. Intermediate supports are provided by slab walls. The foundations are reinforced concrete pile caps on steel H piles.

Both structures are in need of concrete repairs to the pier tops, beam diaphragms, abutments, bearing plinths and replacement of all bearings. Hence, the Technical Survey and Testing proposed will be carried out to establish the extent of any deterioration. Traffic management will be required above deck, comprising of overnight hard shoulder and Lane 1 closures. Work will be phased to be carried out on one bridge and one carriageway at any one time, to ensure minimum disruption to the traffic. Below deck only a stop and go sign will need to be in operation at River Brue for the Public Rights of Way (PRoW), located to the south of the structure, for non-motorised users (NMUs) i.e. pedestrians, equestrians etc.

Access to both structures from below deck will be from Brent Farm and/or Newbridge Drove for River Brue Bridge, and Withy Grove for Huntspill River Bridge. Access to the pier tops will be either an underbridge unit or a pontoon.



Figure 1: Location Plan Showing River Brue Bridge (North) and Huntspill River Bridge (South)

1.2 Pavement

Original as-built drawings indicate the carriageway of both River Brue Bridge and Huntspill River Bridge is comprised of two layers of 20mm mastic, 60mm hot rolled asphaltic base course and 40mm hot rolled asphalt wearing course.

1.3 Drainage

The existing drainage system at River Brue Bridge consists of 18 No. drainage kerbs gullies (9 No. to each carriageway) on the structure and 8 No. (2 No. either side of the bridge) off the structure. The surface water from the combined drainage units discharge into a UPVC pipe within the deck verge of the structure and away towards the drainage channel at the back of the abutments. The water then discharges into chambers which then leads to an outfall into the river.

The existing drainage system at Huntspill River Bridge consists of 24 No. drainage kerbs gullies (12 No. to each carriageway) on the structure and 8 No. (2

No. either side of the bridge) off the structure. The surface water from the combined drainage units discharge into a UPVC pipe within the deck verge of the structure and away towards the drainage channel at the back of the abutments. The water then discharges into chambers which then leads to an outfall into the river.

1.4 Geotechnical

The original as-builts for River Brue Bridge indicate that the revetment is made up of a layer of Type 1 graded stone of varying thickness, 100mm Class E blinding and then Class 30/20 concrete of unknown thickness. The structure since its construction has had abutment refurbishment works carried out in 1998, whereby 6N fill has been used on top of the structural concrete that makes up the abutment extensions. Previous inspection reports indicate the revetments are covered with insitu concrete slabs.

The original as-builts for Huntspill River Bridge indicate that the revetment is made up of a layer of Type 1 graded stone of varying thickness, 100mm Class E blinding and then Class 30/20 concrete of unknown thickness. The footway along the abutments is made up a layer of approved raw fill, 50mm bitumen macadam and 10mm fine cold asphalt.

1.5 Soft Estate and Environment

River Brue Bridge and Huntspill River Bridges are situated over local wildlife sites and Huntspill River National Nature Reserve (NNR) passes underneath Huntspill Bridge. Land surrounding both structures is used by animals for grazing.

Himalayan balsam, an invasive species of plant, was noted during a site visit under the bridge deck close to the works area at River Brue.

1.6 Traffic Signs, Road Markings

There are road markings on the structure deck indicating lane arrangement on the carriageway. There are no traffic signs located on or in the vicinity of both structures.

1.7 Lighting

There is no street lighting at both site locations and no lighting below the structures.

1.8 Structures and Buildings

N/A

1.9 Tunnels

N/A

1.10 Technology

Loops are present to the east side of both structures.

1.11 Statutory Undertakers

Huntspill River Bridge has motorway communications to the east side of the structure. Details of the underground and over ground apparatus, within the vicinity of the structures, are provided in Appendix D of the Pre-construction Information.

1.12 Traffic

The M5 is a dual carriageway comprising of three lanes and a hard shoulder in each direction, with an annual average daily traffic flow of 100842 (49065 north and 51777 south).

FOR INFORMATION ONLY