

Getting to know our network - A303 River Avon Bridge Bearing Replacement



The bridge carrying the A303 over the River Avon near Amesbury is supported on 44 nr bearings. The Pot bearings on the westside were in a particularly poor condition. The contract being undertaken by CRL is to replace these bearings on a SSSI site.

Following an ECI contract works where the proposals for the bearing replacement, scaffold design and environmental controls were developed, works started on site at the end of October.

To provide access to the bearing shelves TR scaffold designed and erected scaffolds from the walkway on the East side and hung from the bridge over the river on the west.



Initially CRL strengthened the structure to allow the bridge to be lifted. This involved infilling the service trenches that passed over the abutments to support the diaphragm sections.

Hydrodemolition was used to break out to enable new rebar to be installed before recasting the section in 4 corners of the bridge.



Following completion of a design and approved AIP jacks were installed either side of the bearings. With only a 20mm gap on the east side 60mm of the bearing shelf needed to be removed to allow the jacks to be installed without affecting the existing bearing supports.

The bridge was jacked approximately 2mm under TM closures effected by Forest. Kiers monitored the forces within the structure and that differential movement between beams remained below 0.25mm. Monitoring was carried out using LVDT gauges attached to the control unit that also recorded the hydraulic forces within the jacks.

Dowels through the elastomeric bearings needed to be replaced before these bearings were fixed in position, whilst maintaining freedom to the dowels. Flowable concrete and EP grout were then used to cast in the base of new bearings.

On the west side taper plates were initially fixed that had been manufactured to pick up the inserts within the existing top plate. The main bearings were then bolted onto the levelled plates. The concrete and grout were then cast in place the bottom of the bearing.



Following checking of the strength of these materials the bridge has been de-jacked on the north side with the gauges indicating the differential displacement between 0.25mm has been maintained.



asphaltic plugs installed by Volker Laser. Concrete Repairs and anti-graffiti coating to the walkway abutment will complete the refurbishment to this bridge without adversely affecting the SSSI site.

*Article by Steve Jones, Southern Regional Director
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Following de-jacking of the South side the top 50mm of HRA over the bridge will be replaced by FM Conway and new



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