

ARCHAEOLOGICAL
WATCHING BRIEF AT
ECKINGTON BRIDGE,
B4080, PERSHORE ROAD,
ECKINGTON,
WORCESTERSHIRE

Graham Arnold and Tom Vaughan

Illustrated by Carolyn Hunt

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Worcestershire Archive and Archaeology Service,
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The Hive,
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Project 3892
Report 1941
WSM 47377

Archaeological watching brief at Eckington Bridge, B4080, Persore Road, Eckington, Worcestershire

Graham Arnold and Tom Vaughan

Background information

<i>Client</i>	Halcrow Group Ltd on behalf of Ringway
<i>Site address</i>	Eckington Bridge B4080, Persore Road Eckington, Worcestershire
<i>National Grid reference</i>	SO 9222 4236
<i>Historic Environment Record activity reference</i>	WSM 47377
<i>Historic Environment Record monument reference</i>	WSM 01415
<i>Scheduled Ancient Monument reference</i>	WT 319
<i>Listed Building reference</i>	LB 442803
<i>Planning authority</i>	English Heritage
<i>Scheduled Monument Consent reference</i>	S00015670, dated 22 July 2011
<i>Project design</i>	Worcestershire Archaeology 2012
<i>Project parameters</i>	IfA 2008

Archaeological and historical background

The archaeological background to the site is given in earlier reports on works undertaken by WA on the bridge in 1993 (Cook 1994; WSM 30065) and in 2011, when preparatory trial holes were excavated across the carriageway, in advance of the full carriageway renewal (Curran 2011; WSM 45806). The following is a summary from Cook (1994).

Eckington Bridge (WSM 01415, SAM WT 319) is a Scheduled Ancient Monument and Listed Grade II structure (LB 442803). The bridge is in line with the crossing point over the River Avon and is approximately 40.75m long. Constructed of sandstone, it has six irregular round arches which vary in span from 3.20m to 6.10m and stepped-up parapets. Each pier has a triangular cutwater, with those to the north carried up to the parapet height to form triangular recesses intended to act as pedestrian refuges.

Prior to the construction of a bridge it is possible that a ford existed further west, in the vicinity where the river is still comparatively shallow. The first mention of a bridge at Eckington is in the Court Rolls of 1534 and 1536, and in a deed of 1573. These documents mention the funds placed with trustees for the repair of the bridge. A further deed suggested no funds were spent and the bridge remained in a state of decay.

Additional documents discussing the state of the bridge mention its disrepair in 1634 and again in 1677, with temporary repairs made in 1693. In early 1728 Worcester masons Robert Taylor and Thomas Wilkinson were employed to "pull down the great wooden bridge lying over the River Avon... erect and build a new stone arch bridge". Foundations of the earlier bridge were reused, possibly including the cutwaters either side and rebuilt in Ombersley stone between 1729-1730. (Brooks and Pevsner 2007, 279).

The bridge was strengthened in 1914 with ferro-concrete "strong cement and sand was poured into all joints of the backs of the arches and heads of the piers... grout was also poured into the joints of the spandrel walls... reinforced concrete was then laid over the whole of the arches" (Cook 1994).

In 1993 a length of the northern parapet was accidentally demolished by a tractor, with many of the stones knocked into the river. Divers recovered as much of the original stone as possible which was ultimately replaced in their original position. In addition a quantity of Red Grinshill sandstone was obtained to replace those stones that were too badly damaged to be reused. These were visible as clean red sandstone blocks on the parapets and on the external elevations of the bridge overall, during the present project (Plates 1, 11 and 12).

The 2011 investigations identified modern tarmac road surfacing deposits on top of the concrete strengthening with some areas of cracking revealed corresponding with cracks in the tarmac surface. The maximum depth reached was 0.12m (Curran 2011, 3).

Aims

The aim of the watching brief was to observe and record archaeological deposits, and to determine their extent, state of preservation, date and type, as far as reasonably possible.

The project had the following specific objectives, as identified by the Curator:

- to record the depth of concrete over tops of each of the six arches when 25mm holes were drilled through the concrete saddling;
- to examine if any medieval stonework was revealed after removal of existing surfacing, and to confirm the extent of saddling over the bridge and any other evidence of the thickness of concrete over the medieval masonry;
- to record any evidence of reinforcement in the concrete saddle;
- to record full elevations of existing internal walls of parapets (i.e. rectified photography) in advance of raising of levels by cast in situ concrete and the cutting of chase for waterproofing;
- any other historic features revealed by the work, eg within pedestrian refuges, to be assessed and recorded

All records were to be related to master survey records of Eckington Bridge. Significant deposits were defined as those likely to be of medieval and later date.

Methods

General specification for fieldwork	HEAS 2012, SMC S00015670
Sources consulted	Cook 1994 Curran 2011
Date(s) of fieldwork	24 – 27 July 2012
Area of site	c 250m ²
Sampling area sampled	Indicated on Fig 2
Dimensions of excavated areas observed	
Carriageway renewal (Tr 9)	length 50m width 5.00m
Services (Tr 9)	length 100m width 0.30m depth 0.20m
Arch holes drilled	diameter 0.025m depth 0.24 – 0.38m

Scheduled Monument Consent to carry out the works was obtained from English Heritage (ref. S00006049). No brief had been prepared but following consultation with the Historic Environment Planning Officer for Worcestershire County Council and English Heritage, it was agreed that a watching brief on groundworks was appropriate.

The trench number sequence followed on from the investigation which took place in 2011 (Curran 2011; WSM 45806).

The works included planing off the top 0.10m of tarmac along the carriageway (Plate 1). Following this, any remaining tarmac was removed with a mechanical excavator to reveal the concrete

strengthening from 1914. The concrete covering the service cables along either side of the carriageway and within the refuges was also removed (Plate 4). The full elevations of the parapets' internal walls were then photographed (examples are shown in Plates 11-14 and all photographs are in the digital archive). It was decided that a new covering of concrete would create a smoother surface for waterproofing and this was approved by Tony Fleming at English Heritage.

Following the removal of the tarmac, holes were drilled in each of the arches, to determine the full depth of the concrete overlying the original sandstone bridge (Plates 15-16). The drill holes were 25mm in diameter. Due to the depth of the concrete, occasionally more than one hole was drilled as longer drills were required.

Access to or visibility of structure

Observation of the carriageway removal and drilling through concrete over the bridge arches was undertaken during and after machine excavation. The exposed surfaces were sufficiently clean to observe well-differentiated archaeological deposits.

Statement of confidence

Access to, and visibility of, deposits allowed a high degree of confidence that the aims of the project have been achieved.

Results

Deposit description (Trench 9)

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
1000	Road Surface	Tarmac	0.00 - 0.16m
1001	Concrete	Concrete covering services along bridge walls and within the re	0.0 - 0.20m
1002	Concrete	Concrete with sand and gravel inclusions. Sealed by Tarmac, 1000.	0.24 - 0.32m

Arches drilled (north to south; Figure 2)

Arch	Depth of concrete over original sandstone bridge
1	0.38m
2	0.25m
3	0.28m
4	0.25m
5	0.24m
6	0.25m (+ concrete bar at c 0.10m)

Discussion and Conclusions

Original sandstone below the carriageway was only identified when holes were drilled through the concrete overlying the arches and on the edges of the lower sections of the parapet wall and refuges

that were previously covered by the footpaths. Neither the original sandstone surfaces, nor any features were uncovered beneath the modern carriageway. The spandrels had been backfilled with concrete saddling in 1914 and the concrete surface was very uneven. The majority of the tarmac was 0.12m in thickness. However, it was slightly thicker (0.17m) between the end of the saddling and the tops of the arches to account for the uneven surface. Cracks were also visible along the carriageway.

The holes drilled demonstrated that the early 20th century concrete was between 0.24m and 0.32m thick at the top of each of the 6 arches across the bridge, overlying the original sandstone. In arch 6, the southernmost on the bridge, a metal bar was encountered at c 0.10m which meant that additional holes had to be drilled adjacent to reach the sandstone below. This was the only area where metal reinforcement was identified within the 1914 concrete.

Both the Ombersley sandstone from the 18th century rebuilding and the Red Grinshill sandstone used to replace damaged blocks in 1993 was noted within the parapet walls. Due to the shallow nature of the carriageway renewal, no structural elements of the bridge predating the early 20th century were exposed or identified within the carriageway itself, nor were any finds recovered. Sandstone was revealed on the lower sections of the internal parapet and refuges. The results mirror those found in the previous works undertaken by Worcestershire Archaeology (Curran 2011).

Publication summary

The Service has a professional obligation to publish the results of archaeological projects within a reasonable period of time. To this end, the Service intends to use this summary as the basis for publication through local or regional journals. The client is requested to consider the content of this section as being acceptable for such publication.

An archaeological watching brief was undertaken on behalf of Halcrow Group Ltd (on behalf of Ringway) at Eckington Bridge B4080, Pershore Road, Eckington, Worcestershire (NGR SO 9222 4236; HER ref WSM 47377; SAM WT 319). Carriageway replacement works were monitored. The tarmac surface was removed and the concrete strengthening from 1914 revealed. The tops of each of the six arches were drilled to discover the depth of the concrete. The concrete depth ranged from 0.24–0.32m overlying the original sandstone bridge arches. The internal walls of the parapets and refuges were recorded photographically. Both the Ombersley sandstone from the 18th century rebuilding and the Red Grinshill sandstone used to replace damaged blocks in 1993 was noted. Due to shallow nature of the works no structural elements of the bridge predating the early 20th century were exposed within the carriageway, although sandstone was recorded in the lower sections of the parapet walls and refuges.

Acknowledgements

The Service would like to thank the following for their kind assistance in the successful conclusion of this project, Alan Swaddling (Halcrow Group Ltd), Tony Fleming (Inspector of Ancient Monuments, English Heritage) and Mike Glyde (Historic Environment Planning Officer, Worcestershire County Council).

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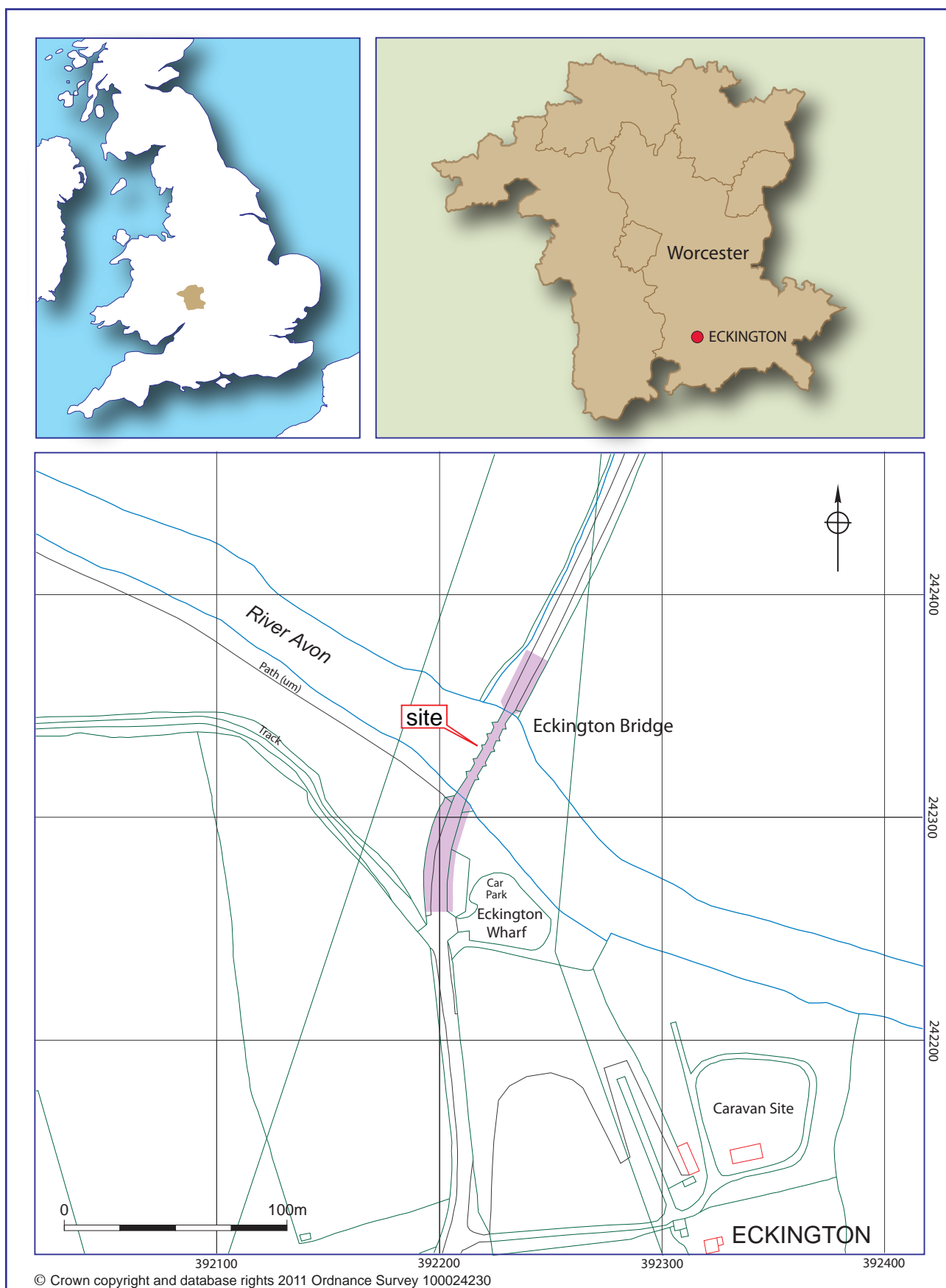
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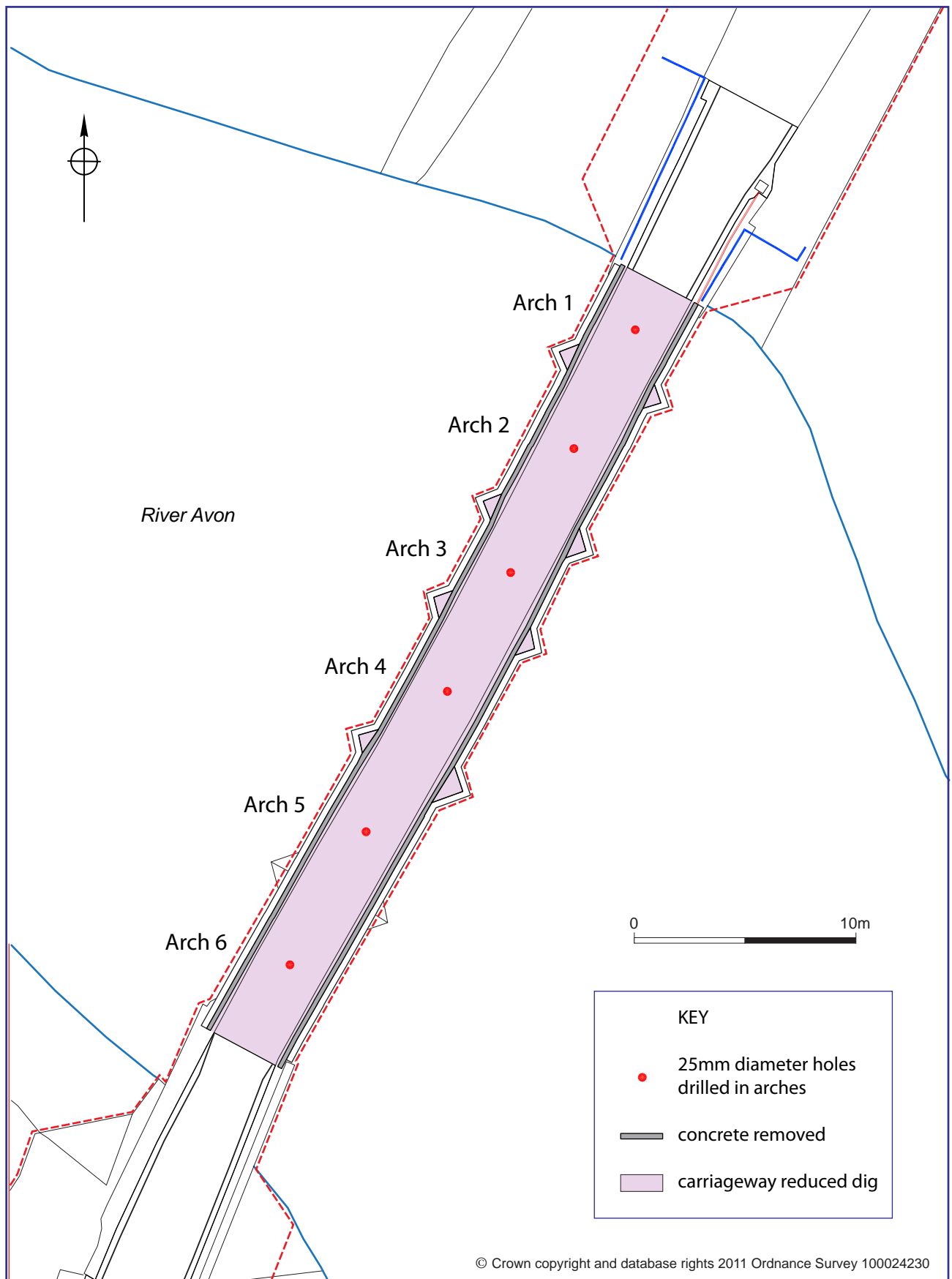
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Figures



Location of the site

Figure 1



*Trench 9 groundworks on bridge (based upon
Worcestershire Highways Drg.No.GTWCC3/925/001A)*

Figure 2

Plates



Plate 1 Planing top tarmac surface off the bridge, looking north



Plate 2 The road surface following planing, looking south



Plate 3 Uneven concrete that had caused cracking in the tarmac carriageway



Plate 4 Breaking out the concrete along the parapet walls to reveal service cables



Plate 5 The service cable revealed on the south-west corner of the bridge



Plate 6 Tarmac removed from the carriageway cables exposed, looking south-west



Plate 7 Example of saddling concrete and underlying plastic sheeting between the bridge arches before cleaning



Plate 8 Road sweeping the bridge concrete, looking south-west



Plate 9 The concrete saddling between the arches after cleaning, looking south-west



Plate 10 Example of drilling holes through the concrete in the centre of each arch, looking east



Plate 11 Parapet wall revealed on the northeast side of the bridge, view south-east



Plate 12 Example of a refuge on east side of bridge, view south-east



Plate 13 Example of parapet wall with sandstone revealed on north-west side of bridge, view west



Plate 14 Refuge on Northwest side of bridge with sandstone revealed, view west



Plate 15 Example drill hole in arch 1; concrete is 380mm in depth overlying the sandstone bridge



Plate 16 Example of drill hole in arch 5; concrete is 240mm in depth down to sandstone bridge

Appendix 1 Technical information

The archive (site code: WSM 47377)

The archive consists of:

3	Field progress reports AS2
1	Photographic records AS3
65	Digital photographs
1	Drawing number catalogues AS4
1	Scale drawings
1	Trench record sheets AS41
1	Computer disk
1	Copy of this report (bound hard copy)

The project archive is intended to be placed at:

Worcestershire County Museum
Museums Worcestershire
Hartlebury Castle
Hartlebury
Near Kidderminster
Worcestershire DY11 7XZ
Tel Hartlebury (01299) 250416