



making sense of heritage

River Avon Restoration, Structures at Upavon, Wiltshire

Archaeological Watching Brief



Ref: 101461.02
March 2015



**River Avon Restoration,
Structures at Upavon,
Wiltshire**

Archaeological Watching Brief

Prepared for:

Environment Agency
Rivers House
Sunrise Business Park
Higher Shaftesbury Road
Blandford
Dorset
DT11 8ST

Prepared by:

Wessex Archaeology
Portway House
Old Sarum Park
Salisbury
Wiltshire
SP4 6EB

www.wessexarch.co.uk



Report Date: March 2015

Report Ref: 101461.02



Quality Assurance

Project Code	101461	Accession Code		Client Ref.	
Planning Application Ref.		Ordnance Survey (OS) national grid reference (NGR)	413520, 155513		

Version	Status*	Prepared by	Checked and Approved By	Approver's Signature	Date
v01	E	GRF and TB	MJR		09/01/15
File:	X:\PROJECTS\101461_Reports\101461_HBR_WB_2015_01_07.doc				
V02	F	GRF and TB	MJR		23/03/15
File:	X:\PROJECTS\101461_Reports\101461_HBR_WB_2015_03_23.doc				
File:					
File:					
File:					

* I = Internal Draft; E = External Draft; F = Final

DISCLAIMER

THE MATERIAL CONTAINED IN THIS REPORT WAS DESIGNED AS AN INTEGRAL PART OF A REPORT TO AN INDIVIDUAL CLIENT AND WAS PREPARED SOLELY FOR THE BENEFIT OF THAT CLIENT. THE MATERIAL CONTAINED IN THIS REPORT DOES NOT NECESSARILY STAND ON ITS OWN AND IS NOT INTENDED TO NOR SHOULD IT BE RELIED UPON BY ANY THIRD PARTY. TO THE FULLEST EXTENT PERMITTED BY LAW WESSEX ARCHAEOLOGY WILL NOT BE LIABLE BY REASON OF BREACH OF CONTRACT NEGLIGENCE OR OTHERWISE FOR ANY LOSS OR DAMAGE (WHETHER DIRECT INDIRECT OR CONSEQUENTIAL) OCCASIONED TO ANY PERSON ACTING OR OMITTING TO ACT OR REFRAINING FROM ACTING IN RELIANCE UPON THE MATERIAL CONTAINED IN THIS REPORT ARISING FROM OR CONNECTED WITH ANY ERROR OR OMISSION IN THE MATERIAL CONTAINED IN THE REPORT. LOSS OR DAMAGE AS REFERRED TO ABOVE SHALL BE DEEMED TO INCLUDE, BUT IS NOT LIMITED TO, ANY LOSS OF PROFITS OR ANTICIPATED PROFITS DAMAGE TO REPUTATION OR GOODWILL LOSS OF BUSINESS OR ANTICIPATED BUSINESS DAMAGES COSTS EXPENSES INCURRED OR PAYABLE TO ANY THIRD PARTY (IN ALL CASES WHETHER DIRECT INDIRECT OR CONSEQUENTIAL) OR ANY OTHER DIRECT INDIRECT OR CONSEQUENTIAL LOSS OR DAMAGE.



River Avon Restoration, Structures at Upavon, Wiltshire

Archaeological Watching Brief

Contents

Summary	iii
Acknowledgements	iv
1 INTRODUCTION	1
1.1 Project background	1
1.2 The Site.....	2
2 HISTORICAL BACKGROUND	2
3 METHODOLOGY	3
3.1 Aims and objectives	3
3.2 Watching Brief methodology	3
4 RESULTS	4
4.1 The weir/hatch structure.....	4
4.2 The levee and culvert.....	6
5 DISCUSSION	7
5.1 The weir/hatch structure.....	7
5.2 The levee and culvert.....	8
5.3 Copyright.....	8
6 REFERENCES	9
6.1 Bibliography	9
6.2 Online resources	9

Figures

Figure 1	Site location plan
Figure 2	Plan of the weir structure prior to and after removal of the concrete fabric
Figure 3	The east bank, west wall during demolition

Plate

Plate 1	The weir structure viewed from the north-west prior to demolition
Plate 2	The east bank of the weir structure prior to demolition



- Plate 3 The east bank, east wall (foreground) and west bank (background) of the weir structure prior to demolition
- Plate 4 The weir structure viewed from the east to the west bank prior to demolition
- Plate 5 The weir structure viewed from the east to the west bank prior to demolition. The photo shows the east bank concrete platform
- Plate 6 The west bank of the weir structure after demolition and the re-grading of the bank. The course of stone blocks is visible to the lower right of the photo
- Plate 7 The weir structure prior to demolition showing a detail of the west bank, west wall
- Plate 8 Timber recovered from the demolition of the weir slope
- Plate 9 The weir structure on the east bank after the concrete platform was removed
- Plate 10 The weir structure on the east bank after the concrete platform was removed. The photo shows the brick sub-structure and earth and rubble infill
- Plate 11 Timber 1 recovered from beneath the east bank, west wall of the weir structure with several carpentry joints including mortises and tenons and a groove along its length
- Plate 12 Timber 1. The opposing face to that shown in Plate 11. It has a diagonal groove along its length
- Plate 13 Timber 2 recovered from beneath the east bank, west wall of the weir structure
- Plate 14 Timber 2 showing details of the groove along its length and damaged areas at one end
- Plate 15 Timber 3 recovered from beneath the east bank, west wall of the weir structure. The two tenons along the length of the timber are clearly visible
- Plate 16 The east bank after the complete demolition of the weir structure but prior to the final re-grading of the bank
- Plate 17 Entrance of culvert viewed from the south
- Plate 18 Southeast end of culvert (submerged, view from the north-west) unmonitored landscaping works in the background
- Plate 19 Interior of the culvert showing brick vault
- Plate 20 Levee construction material revealed after topsoil strip, (viewed from the southwest) with rubble made ground material on the edge to the left and chalk made ground material on the edge to the right
- Plate 21 Representative levee construction section trench with submerged culvert to the left
- Plate 22 Removal of levee material works prior to culvert removal. View from the south-east
- Plate 23 Culvert removal in progress and brick construction detail



River Avon Restoration, Structures at Upavon, Wiltshire

Archaeological Watching Brief

Summary

Wessex Archaeology was commissioned by the Environment Agency to undertake an archaeological watching brief and recording during the demolition of structures adjacent to the River Avon in Upavon, Wiltshire, SN9 6DS centred on Ordnance Survey National Grid Reference (NGR) 413520, 155513.

The works in autumn 2014 took place on the upper reaches of the River Avon at Upavon. The upstream end of the Upavon reach has been dredged and there is poor connectivity to the floodplain due to the presence of high levees particularly along the left bank. The high levees prevent water from flowing out into the floodplain during times of high flow; this has the effect of raising levels further upstream as water is confined within the channel. In addition, there was a small weir located within the reach. It was likely to have previously been a hatch structure however, the hatch had since collapsed (in 2004) and the structure formed a weir across the channel which impeded fish passage during low flows.

From consultation with the Wiltshire Council Assistant Archaeologist, Clare King, the remains of the weir/hatch structure were identified as being of potential historic interest and required an archaeological watching brief during their removal to record and photograph them along with any associated artefacts. In addition to the weir, there was a large levee/bank situated to the north of the weir/hatch structure which was removed as part of works. The levee/bank contained a brick-lined culvert at its base linking the upstream and downstream channel, which was also to be removed.

During the watching brief three phases of construction were identified in the weir structure during its demolition. Timbers recovered from the base of the east bank west wall and embedded across the weir slope appear to belong to the earliest phase, although some may have been relocated and reused as part of a later phase. Unfortunately the form of timber hatch structures is not well known due to poor survival of the fabric which meant they were often rebuilt in more durable materials such as stone, brick or concrete. The structure which replaced it was constructed from machine made red brick and hydraulic lime mortar which indicate a mid-late 19th century date at the earliest. It is likely the brick hatch/weir is the structure depicted on the 1886 Ordnance Survey map. The final concrete structure which was still partially extant in December 2014 was probably constructed during the latter half of the 20th century after the demolition of the footbridge and dam depicted on earlier maps, as no trace of these structures survived. The deterioration of the weir to its dilapidated and disarticulated condition as recorded in October 2014 occurred within the last ten years and was caused by severe flooding and heavy rainfall one winter.

The levee and culvert do not appear on any of the available mapping suggesting that they may be a later 20th century creation constructed on the site of an earlier channel, which is depicted in mapping from 1886-1975. This is supported by both the relatively modern nature of the culvert construction materials and the made ground re-deposited river dredged material of the levee construction. In addition, its modern components and a lack of artefactual evidence within the levee construction material, which would point to earlier construction, also support this.



River Avon Restoration, Structures at Upavon, Wiltshire

Archaeological Watching Brief

Acknowledgements

The project was commissioned by the Environment Agency and Wessex Archaeology is grateful to Sarah Galsworthy in this regard. Thanks are also due to Clare King, Assistant Archaeologist at Wiltshire Council for her advice and assistance.

The project was managed for Wessex Archaeology by Matt Rous and the watching brief was undertaken by Tom Burt, Bob Davis and Grace Flood. This report was compiled by Tom Burt and Grace Flood. The illustrations were prepared by Kitty Foster.



River Avon Restoration, Structures at Upavon, Wiltshire

Archaeological Watching Brief

1 INTRODUCTION

1.1 Project background

- 1.1.1 Wessex Archaeology was commissioned by the Environment Agency (hereafter the 'Client') to undertake an archaeological watching brief and recording during the demolition of structures adjacent to the River Avon in Upavon, Wiltshire, SN9 6DS centred on Ordnance Survey National Grid Reference (NGR) 413520, 155513 (hereafter 'the Site').
- 1.1.2 The River Avon Restoration Plan is a strategic plan for the Hampshire Avon catchment area that aims to restore degraded river habitats throughout the catchment, to achieve targets under Habitats Directive and Water Framework Directive legislation. As part of this plan, construction works are planned on various reaches on the Avon and Nadder in the first year of a five year programme of works.
- 1.1.3 The works in autumn 2014 took place on the upper reaches of the River Avon at Upavon. The upstream end of the Upavon reach had been dredged and there was poor connectivity to the floodplain due to the presence of high levees particularly along the left bank. The presence of high levees prevents water from flowing out into the floodplain during times of high flow; this has the effect of raising levels further upstream as water is confined within the channel. In addition, there was a small weir located within the reach. It was likely to have previously been a hatch structure (possibly used to supply water to a downstream corn mill which has subsequently been demolished), however, the hatch had since collapsed (in 2004) and the structure formed a weir across the channel. During normal and high flows the structure did not impede fish passage, however it was observed during low flows that it could cause a significant head loss across it which would impede some fish passage.
- 1.1.4 From consultation with the Wiltshire Council Assistant Archaeologist, Clare King, the remains of the weir/hatch structure were identified as being of potential historic interest and would require an archaeological watching brief during their removal to record and photograph it along with any associated artefacts. In addition to the weir, there was a large levee/bank situated to the north which was removed as part of works. The levee/bank contained a brick-lined culvert at its base linking the upstream and downstream channel, which was also to be removed.
- 1.1.5 A Written Scheme of Investigation (WSI) set out the methodologies and standards employed by Wessex Archaeology to undertake the watching brief, and was submitted for approval by the Wiltshire Council Assistant Archaeologist (WCAA) prior to implementation.



1.2 The Site

- 1.2.1 The Site consisted of two separate features which were situated within a pasture field at c.92m aOD, a short distance to the north of the village of Upavon, Wiltshire (**Figure 1**). The weir/hatch structure was situated on the banks of the River Avon at NGR 413517, 155512 and the levee and culvert were located approximately 45m to the north at NGR 413492, 155594.
- 1.2.2 At the location of the weir structure the river curved from a north-south alignment upstream of the weir to west-east alignment downstream for approximately 50m. The weir structure was aligned on an approximate north-south long-axis so the north and south ends of the weir structure were located on the east and west banks of the river, respectively.
- 1.2.3 The Site is located within the River Avon Special Area of Conservation (SAC) and the River Avon System Site of Special Scientific Interest (SSSI). Remnant water meadow drains are visible within the field which have largely silted up over the years.
- 1.2.4 The Site is underlain by alluvium (Geological Survey of Great Britain 1:50,000 map, sheet 282). On both sides of the River Avon are deposits of alluvium and, further out, of river and valley gravels. Beyond those are outcrops of Lower, Middle, and Upper Chalk.

2 HISTORICAL BACKGROUND

- 2.1.1 A brief historical background was included in the WSI (Wessex Archaeology 2014, 101461.01) and is expanded below.
- 2.1.2 The Victoria County History records that the village of Upavon developed and expanded during the early medieval period. A church was standing by 1086, presumably on its present site. Early settlement probably followed the existing road pattern with farms on the east side beside the old Avebury–Amesbury road and on the west side in Chapel Lane and beside the hollow way from the church to Wood Bridge. During the 13th century markets and fairs, later of some importance, began to be held in Upavon. Its convenient location in central Wiltshire also made Upavon a popular place for holding royal inquests in the Middle Ages, and it was visited by John and Edward I. Early-14th century taxation assessments were high and there were 127 poll-tax payers in 1377, the fourth highest village total in the hundred. During the later medieval period the village declined and was described in 1591 as 'somewhat low' (British History Online website).
- 2.1.3 From consultation of the Heritage Gateway resource, the two sites are of potential historic interest due to their association with water meadows along the River Avon. The water meadows, associated earthworks and structures are recorded on the English Heritage Pastscape database as of post-medieval date (Monument no. 1482465) which is visible on aerial photographs taken in 1945. These are situated on the eastern side of the river Avon at Upavon, with some channels on both sides at the northern end. The remains are in places fragmentary but can be traced northwards for over 1km.
- 2.1.4 On the west bank of the River Avon opposite the bank and culvert is evidence of medieval or post-Medieval building platforms and hollow ways at the northern end of Upavon, which represent settlement shrinkage (Monument no. 1032455).
- 2.1.5 A map regression exercise for the area indicates that the present weir is denoted as a 'hatch' on the 1886 Ordnance Survey (OS) map with 'footbridge' also denoted in subsequent mapping in 1924 and 1939, indicating that it was possible to walk across the



river at this point and time. The 1900 OS map shows a dam adjoining the hatch on its west side which allowed water to be diverted away from the mill leat to the south and instead flow eastwards through the hatch. The location of the dam is shown slightly further south in later OS maps (1924, 1939 and 1961) in the approximate position of the west river bank at present. The 1939 OS shows two footbridges in this area, one across the hatch itself and one south of the dam across the mill leat but the latter had been removed by 1961. These maps (1939 and 1961) label the mill leat as Mill Race which suggests the leat continued to hold water during this period.

- 2.1.6 The hatch, dam and footbridge are not denoted on the 1975 Ordnance Survey map indicating that they had gone out of use by this time. The mill leat to the south-west of the weir/hatch site is depicted as a single dotted line which suggests it was dry by this date, but survived as a ditch which is still visible today.
- 2.1.7 The levee and culvert do not appear on any of the available mapping suggesting that they are either present, but not displayed, or they represent a later 20th century construction phase which were constructed on the site of an earlier channel, which is depicted in mapping from 1886-1975.
- 2.1.8 The evidence therefore suggests that water meadow systems were in existence in the parish of Upavon during the post-medieval period, and these would have been maintained in some form up until the mid-late 20th century.
- 2.1.9 A conversation with Harry Rowe, one of the occupiers of land on the west bank indicated that a sluice continued to operate on site in the 21st century but was removed about a decade ago, circa 2004.

3 METHODOLOGY

3.1 Aims and objectives

- 1.1.1 The aims of the watching brief were:
- to record the remnant weir/hatch structure by means of measured and drawn record and digital photography;
 - to record the levee and culvert by means of measured and drawn record and digital photography;
 - to prepare a report on the results of the watching brief

3.2 Watching Brief methodology

3.2.1 The fieldwork consisted of a photographic record of the Site prior to the commencement of groundworks and the monitoring of those works carried out by contractors. Wessex Archaeology staff investigated all associated archaeological deposits and features by excavation and recording commensurate with the scale of work and using Wessex Archaeology's *pro forma* recording system. Recording included written, drawn, and photographic elements.

3.2.2 Weir/hatch structure

The initial site visit indicated that the weir/hatch structure was in a poor condition with collapsing wing walls and the weir platform broken. The largest remaining parts were attached to either side of the river and disarticulated remnants visible on the river bed. The extant remnant parts of the structure were recorded with detailed digital photography and measured sketches prior to the demolition works. A photographic scale of appropriate size was included in detailed views where appropriate.

- 3.2.3 Following the initial recording of the structure, a watching brief was carried out during the demolition works in order to gather information which might aid in the understanding of its construction (materials, methods and phases of construction) and obtain dating evidence. The demolition was carried out by a mechanical excavator using a combination of toothed bucket and breaker. The watching brief was maintained throughout the demolition of the structure.
- 3.2.4 Unstratified artefacts were recovered during the demolition of the weir structure. These were washed, weighed, counted and identified. The artefacts are discussed in section 5 of this report.
- 3.2.5 Levee and culvert
- A watching brief was maintained during the removal of a representative section of the levee and during the demolition of the culvert, both of which were removed with mechanical excavator. A measured and drawn record was made of the culvert in addition to a detailed digital photographic record. A photographic scale was included in detailed views where appropriate. The culvert was surveyed using a Leica GPS and related to Ordnance Survey.

4 RESULTS

4.1 The weir/hatch structure

- 4.1.1 The weir/hatch structure was recorded on the 17th October 2014, prior to demolition. The demolition of the structure, carried out by contractors, was monitored on 21st – 24th October 2014.
- 4.1.2 The remains of the structure was positioned on both side of the River Avon on a north-south axis between the east and west banks. The river curves from its typical north-south alignment to an east-west alignment at this point, therefore the north end of the weir structure was on the east bank and the south end on the west bank. When recorded the structure was in poor condition with collapsing wing walls and broken platforms attached to either bank and disarticulated remnants visible on the river bed. **Plates 1 to 5** show the structure prior to its demolition.
- 4.1.3 The weir structure was constructed from a variety of materials which correspond to at least three phases of construction. The most recent phase was constructed of shuttered concrete and comprised retaining walls and platforms on each bank and across the weir slope within the river (**Plates 1, 2 and 4**). The retaining walls were fixed into the earth bank and brick sub-structure with rebar. The concrete platform varied in thickness due to the uneven surface beneath but typically measured 0.1m thick.
- 4.1.4 Beneath the concrete, the walls of the structure were primarily constructed of brick but there were also limestone block courses at low level in the west wing walls of both banks. On the east bank, the west wall had three courses of stone that gradually became visible as the water level dropped after demolition of the weir slope. The lowest of these stone courses extended the furthest beneath the brickwork, whereas the higher courses were shorter and supported the concrete retaining wall above. At the time of survey, part of the face of the east bank's west wing wall was damaged through loss of some stone and brick. This fallen material became visible on the river bed as demolition progressed (**Plate 1, Figure 3**). On the west bank, a single course of stone blocks became visible as the concrete super-structure was removed. This course of stones was not removed during the demolition, instead the earth bank was rebuilt around it (**Plate 6**).

- 4.1.5 The brick wing walls of the weir structure are for the most part regularly coursed and laid in an English bond pattern (**Plates 1, 3 and 7**). The exception is an area of brickwork in the east bank's west wing wall adjacent to the concrete retaining wall and directly above the upper course of stone. In this area the bricks are laid irregularly with a combination of headers and rowlocks because the stone blocks below do not form a level surface so the bricks must fill an irregular space (**Plate 1, Figure 3**). The bricks used were machine-cut, unfrogged type measuring 22.5cm x 11cm x 7cm. The bricks were bonded with pale hydraulic lime mortar.
- 4.1.6 On the west bank, the brick wing wall was left intact (**Plate 7**), only the concrete fabric and earth and brick rubble material beneath the platform was removed.
- 4.1.7 Material removed from the weir slope included large fragments of reinforced concrete (the largest fragments measuring 1.9m x 0.7m x 0.34m, 0.8m x 0.31m x 0.34m and 0.7m x 0.25m x 0.3m). Also recovered from the weir slope were fragments of brickwork, the largest measuring 0.35m x 0.28m x 0.225m; although whether these were part of the slope itself or disarticulated material from the banks was uncertain. Also excavated from the weir slope were several pieces of metal. These included two L-profile iron bars with holes for rivets; a thin iron plate similarly pierced with holes and a tapered strap hinge. It is possible this metalwork formed part of the earlier hatch structure, although it is equally likely the material was deposited from elsewhere.
- 4.1.8 The only artefacts recovered were of 19th – 20th century date which were collected during the excavation of the weir slope and are unstratified. Artefacts include a sherd of blue-and-white 19th century pottery, an iron nail with fragments of timber attached to it, a rib with a sharp cut end and the base of a clear glass jar. Although recovered during the demolition, none of these artefacts were directly associated with the weir or earlier hatch so cannot be used to date the structure. None of the artefacts have been retained.
- 4.1.9 A timber was recovered from the demolition of the weir slope (Timber 4, **Plate 8**). This timber was squared in section and tapered to a point at each end although one end appeared broken. It measured 1m in length and 0.13m in width tapering to 0.03m at one end and 0.08m at the broken end. The timber was split and bent at its centre but would have originally been straight. It had an iron nail with its point protruding from close to the broken end of the timber and there was a similar nail attached to a fragment of timber found in the spoil from the weir slope. It is possible that this timber formed part of an earlier timber hatch that existed before the 19th century phase brick and stone structure.
- 4.1.10 Beneath the concrete platform, the brick sub-structure of the weir was revealed (**Plate 9**). The south and east walls beneath the platform measured 0.6m in width; wider than the east and west wing walls which were only 0.34m wide. There is a straight joint between the west and south wall of the platform (**Plate 10**). The west wall measured 0.34m in width and consisted of both brick and stone courses (**Plate 1, Figure 3**). The centre of the platform was infilled with a mixture of earth, grey sand and brick rubble (**Plate 10**). There was no finished surface beneath the concrete which suggests that the surface of the 19th century phase brick and stone structure was removed before the concrete phase was added.
- 4.1.11 A stone block supported the brickwork at the south-west corner. The stone block was positioned on top of a section of timber that extended across part of the weir slope and continued beneath the east bank west wall. More timbers were recovered from beneath this wall.

- 4.1.12 The timbers appeared to be constructed from hardwood, possibly oak, and lay horizontally on the river bed. Unfortunately, the timbers that extended across the river were washed into the weir pool and could not be recovered; however, three sections of timber from beneath the west wall were retrieved and recorded.
- 4.1.13 Timber 1 was recovered from underneath the east bank west wall under what was the concrete platform. It measured a maximum of 1.81m x 0.18m x 0.28m. It is broken at one end which has a mortise 0.18m and a broken tenon 0.04m x 0.02m x 0.18m. At the opposite end is a more substantial tenon 0.18m x 0.14m x 0.34m. One side of the timber is cut with a series of three mortises 0.23 x 0.08m, 0.22m x 0.08m and the third is 0.80m x 0.07m; all are 0.08m deep. This side also has a shallow groove cut 0.02m wide and at least 1m in length (**Plate 11**). There is another groove on the opposing face of the timber. The groove measured 0.08m wide and 0.05m deep and crossed the face of the timber diagonally (**Plate 12**).
- 4.1.14 Timber 2 (**Plates 13-14**) was also recovered from underneath the east bank west wing wall, positioned approximately beneath the concrete retaining wall. It measured 1.34m in length and is tapered so ranges from 0.23m x 0.25m to 0.12m x 0.13m at each end. The smaller end appears to be broken and has lost some fabric which may account for its lesser dimensions. This broken end has three broken tenons visible arranged at three of its four corners, the longest measures 0.12m. The timber narrows from 0.25m wide to 0.11m at a point 0.8m from its intact end and then tapers in a series of broken steps towards the damaged end. The intact end of the timber has two large tenons that extend from a sloping face. One is 0.03m x 0.19m x 0.11m and the other measures 0.06 x 0.20 x 0.10. Neither measures the full width of the timber and they are slightly offset to each other. It is possible there were some more grooves cut into the broken end of the timber, however these were ephemeral and may be due to lost fabric due to damage rather than specific cuts.
- 4.1.15 Timber 3 (**Plate 15**) was located in the same area as Timber 1. It is the smallest of the timbers retrieved from beneath the east bank west wall and measures 1.05m x 0.11m x 0.10m (max) but is broken at both ends. It has a diagonal groove 0.07m wide on one side with a concave profile 0.02m deep. On the opposing face are two tenons. One is 0.38m from the end of the timber and measures 0.13m x 0.03m in length and extends 0.065m from the face of the timber. The other is 0.21m from the opposite end of the timber, it measures 0.05m x 0.07m and extends 0.02m from the timber surface. There is a gap of 0.23m between the two tenons.
- 4.1.16 After the demolition of the structure, the spoil was removed to the Site compound for disposal offsite in a nearby field. The entirety of the weir structure had been removed from the east bank which widened the river at this point and left a vertical drop from the remaining bank (**Plate 16**). Further work to re-grade this bank post-demolition of the weir structure was not monitored by Wessex Archaeology.

4.2 The levee and culvert

- 4.2.1 Following the removal of the weir/hatch structure the levee and culvert were removed by contractors as part of the River Avon Restoration scheme. The works were monitored by Wessex Archaeology staff as part of an archaeological watching brief which took place between 8th – 11th December 2014.
- 4.2.2 Situated along the east bank of the River Avon, the levee comprised an earth bank which measured approximately 15m in width and 1.6m in height, part of which extended north-east from the River Avon for approximately 40m separating the upstream and downstream

river bank and a small water channel, which was linked via a 1.4m wide brick-lined culvert **Figure 1**. When first viewed in October 2014 the levee and culvert appeared to be in good condition and functioning (**Plates 17-18**). A photograph taken by the Environment Agency on the 29/10/14 (**Plate 19**), shows the interior of the culvert partially filled with water. A deposit of soil/material on the left side of the culvert suggests that the brick vault may have partially failed in this area.

- 4.2.3 During the removal of the levee and culvert it was found that a rise in groundwater meant that the top of the culvert was submerged to a depth of 0.2m with the water meadow upstream and downstream forming two ponds at either end of the culvert. Unfortunately this meant that access for recording purposes was not possible. The dimensions of the culvert were recorded by GPS.
- 4.2.4 The levee construction was recorded through a representative section excavated during the ground-works to establish the depth of the buried culvert at 1.2m below the top of the levee. This construction consisted of alternate layers of dark blackish grey and mid greenish grey silty clay material between 0.04m and 0.19m thick with abundant well sorted chalk fleck inclusions (**Plate 20**). This probable re-deposited river dredged material was consolidated by brick and stone rubble material on the levee's northern side and chalk rubble on the levee's southern side (**Plate 21**). This was most likely modern made ground material given the estimated construction date of the culvert and the presence of corrugated Iron sheeting and wire cable within the top layers at a depth of 0.4m. The remainder of the levee material removal was monitored but nothing of archaeological significance was observed and no artefacts were recovered.
- 4.2.5 With the exception of its length and width (approximately 15m x 1.4m) details of the culvert construction and profile could not be recorded *in-situ* due to the flooded conditions at the time of works (**Plate 22**), however, the earlier interior photographs (**Plates 18-19**) indicate that top of the culvert was barrel vaulted.
- 4.2.6 The demolition of the culvert was monitored (**Plate 23**) and a representative sample of brick and mortar and possible stone foundation material was retrieved for analysis. This comprised of hard, un-frogged red bricks measuring 23cm x 11cm x 8cm bonded by a pale, coarse, cementitious mortar containing sub-angular inclusions. It appears from the brick and mortar analysis that the brick is likely to be of late 19th – 20th century date. It is not known if the fragment of rubble limestone is related to the structure.

5 DISCUSSION

5.1 The weir/hatch structure

- 5.1.1 Three phases of construction were identified in the weir structure during its demolition. The timbers recovered from the base of the east bank west wall and embedded across the weir slope belong to the earliest phase identified although they appear to have been relocated and reused as part of a later phase. The evidence for this is their carpentry joints serve no purpose in the horizontal position they were recovered from which suggests the timbers have been moved from their original positions. The grooves on the opposing faces of Timber 1 would be of use if the timber were in a vertical position to allow timber boards to be slotted in either side. Similarly the large tenons at the ends of Timbers 1 and 2 would allow these timbers to be positioned vertically slotting into horizontal timbers laid on the river bed.
- 5.1.2 Unfortunately the form of timber hatch structures is not well known due to poor survival of the fabric which meant they were often rebuilt in more durable materials such as stone,



brick or concrete. However, it is likely that timber hatches had a similar form to stone hatches as they serve identical functions. A simple form of stone hatch has 'stop' stones carved with vertical grooves attached to each bank with timber boards dropped in between them. Hatches across wider rivers have a central stop stone carved with grooves on opposing faces supporting timber boards to either side (Cowan 2005, 7). The grooved timbers retrieved from the Upavon weir structure may have served a similar function to the 'stop' stones in stone hatches. It is therefore likely that these timbers formed part of an earlier phase of hatch structure and when dismantled the timbers were reused to form the foundation of the later phase brick and stone structure.

- 5.1.3 The size of the machine-made bricks, use of hydraulic lime mortar and appearance of the brickwork in the walls of the weir structure indicate a 19th century date at the earliest. It is therefore likely they formed part of the structure visible on the 1886 first edition OS map.
- 5.1.4 At the time of survey there was no visible evidence of the dam that is depicted on the 1900-1961 OS maps or of the footbridge on 1924-1961 OS maps. The dam and footbridge were removed, the mill leat to the south of the hatch structure drained and the mill to the south demolished at some point between 1961 and 1975. It is possible that the concrete material, the latest phase of construction, was introduced in the same period as these alterations. Certainly the concrete phase dates from the latter half of the 20th century after the demolition of the footbridge and dam as no trace of these structures survives.
- 5.1.5 The deterioration of the weir to its dilapidated and disarticulated condition as recorded in October 2014 occurred within the last ten years and was caused by severe flooding and heavy rainfall one winter.

5.2 The levee and culvert

- 5.2.1 The levee and culvert do not appear on any of the available mapping suggesting that they may be a 20th century creation constructed on the site of an earlier channel, which is depicted in mapping from 1886-1975.
- 5.2.2 This is supported by both the relatively modern nature of the culvert construction materials and the made ground re-deposited river dredged material of the levee construction. In addition, its modern components and a lack of artefactual evidence within the levee construction material, which would point to earlier construction, also support this.
- 5.2.3 The evidence therefore suggests that water meadow systems were being modified and maintained in some form up until the mid-late 20th century.

5.3 Copyright

- 1.1.1 Wessex Archaeology shall retain full copyright of any report under the Copyright, Designs and Patents Act 1988 with all rights reserved, excepting that it hereby provides an exclusive licence to the Client for the use of the report by the Client in all matters directly relating to the project as described in the specification. Any document produced to meet planning requirements may be copied for development control, planning and educational purposes without recourse to the Copyright owner, the copyright owner to be given full acknowledgment in any reproduction of material.
- 5.3.1 This document and the archive generally, may contain material that is non-Wessex Archaeology copyright (e.g. Ordnance Survey, British Geological Survey, Crown Copyright), or the intellectual property of third parties, which we are able to provide for limited reproduction under the terms of our own copyright licences, but for which copyright



itself is non-transferable by Wessex Archaeology. All remain bound by the conditions of the Copyright, Designs and Patents Act 1988 with regard to multiple copying and electronic dissemination of this document and subsequent report.

6 REFERENCES

6.1 Bibliography

Cowan, Michael 2005. *Wiltshire Water Meadows*. Hobnob Press

Wessex Archaeology, 2014, *River Avon Restoration Plan, Upavon, Wiltshire, Written Scheme of Investigation for an Archaeological Watching Brief*, ref 101461.01

6.2 Online resources

British History Online <http://www.british-history.ac.uk>

Elizabeth Crittall (editor), A. P. Baggs, D. A. Crowley, Ralph B. Pugh, Janet H. Stevenson, Margaret Tomlinson, 1975 "Parishes: Upavon," *A History of the County of Wiltshire: Volume 10, Victoria County History* 159-173. URL: <http://www.british-history.ac.uk/report.aspx?compid=102791> Date accessed: 27 October 2014



- Levee
- Culvert
- Weir/hatch

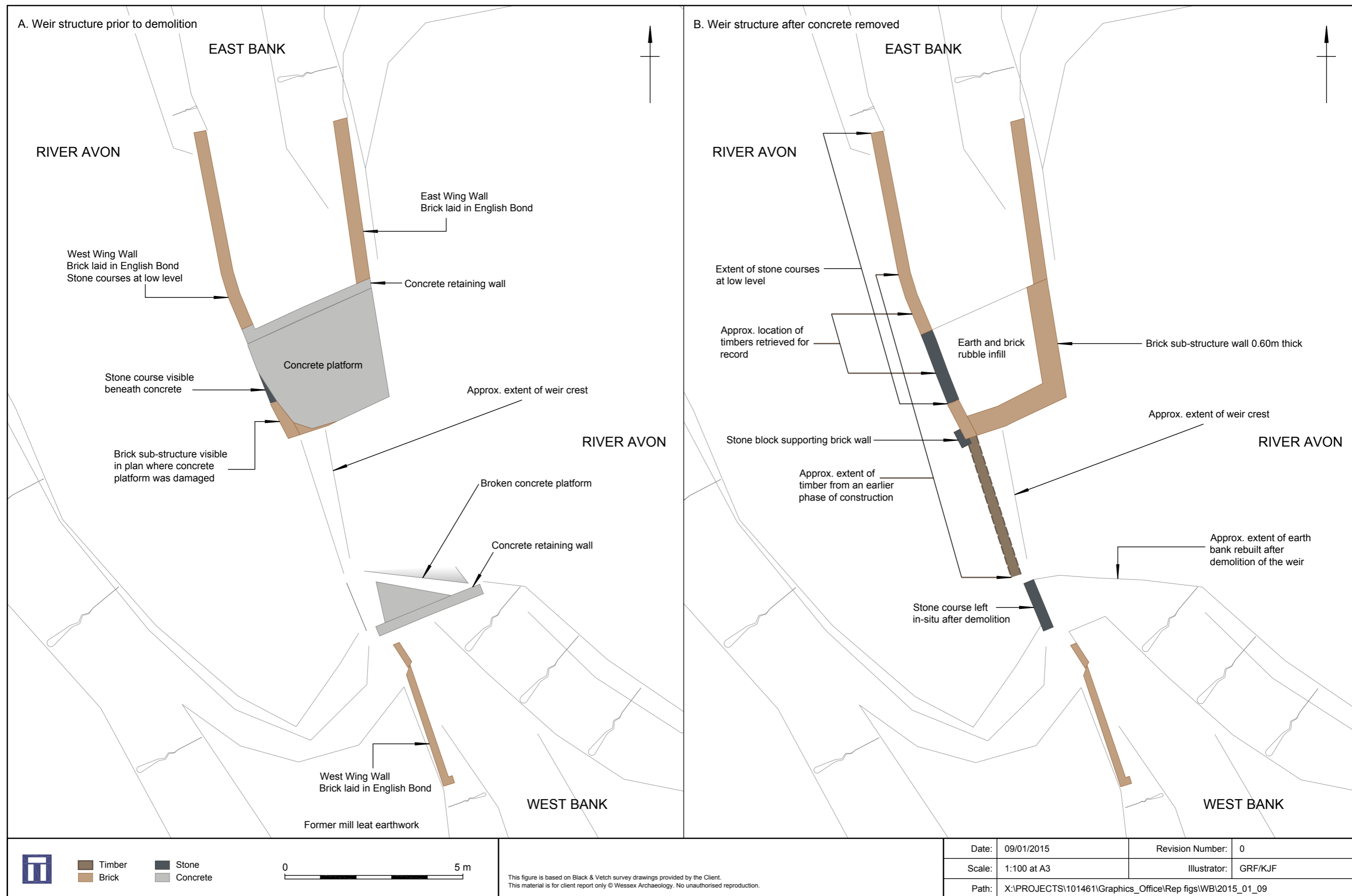


Ordnance Survey, © Crown Copyright 2015. All rights reserved. Licence number 100022432
 Contains Ordnance Survey data © Crown Copyright and database right 2012.
 This material is for client report only © Wessex Archaeology. No unauthorised reproduction.

Date:	09/01/2015	Revision Number:	0
Scale:	1:10,000 & 1:1000 @A4	Illustrator:	KJF
Path:	X:\PROJECTS\101461\Graphics_Office\Rep figs\WB\2015_01_09		

Site location plan


Figure 1



Plan of the weir structure prior to and after removal of the concrete fabric

Figure 2



	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.	Date: 09/01/2015	Revision Number: 0
		Scale: Not to scale	Illustrator: KJF
		Path: X:\PROJECTS\101461\Graphics_Office\Rep figs\WB\2015_01_09	

The east bank, west wall during demolition

Figure 3



Plate 1: The weir structure viewed from the north-west prior to demolition



Plate 2: The east bank of the weir structure prior to demolition


	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	09/01/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KJF
	Path:	X:\PROJECTS\101461\Graphics_Office\Rep figs\WB\2015_01_09		



Plate 3: The east bank, east wall (foreground) and west bank (background) of the weir structure prior to demolition



Plate 4: The weir structure viewed from the east to the west bank prior to demolition


	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.		
	Date:	09/01/2015	Revision Number: 0
	Scale:	N/A	Illustrator: KJF
	Path:	X:\PROJECTS\101461\Graphics_Office\Rep figs\WB\2015_01_09	



Plate 5: The weir structure viewed from the east to the west bank prior to demolition. The photo shows the east bank concrete platform



Plate 6: The west bank of the weir structure after demolition and the re-grading of the bank. The course of stone blocks is visible to the lower right of the photo


	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	09/01/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KJF
	Path:	X:\PROJECTS\101461\Graphics_Office\Rep figs\WB\2015_01_09		



Plate 7: The weir structure prior to demolition showing a detail of the west bank, west wall



Plate 8: Timber recovered from the demolition of the weir slope.


	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	09/01/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KJF
	Path:	X:\PROJECTS\101461\Graphics_Office\Rep figs\WB\2015_01_09		



Plate 9: The weir structure on the east bank after the concrete platform was removed



Plate 10: The weir structure on the east bank after the concrete platform was removed. The photo shows the brick sub-structure and earth and rubble infill


	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.		
	Date:	09/01/2015	Revision Number: 0
	Scale:	N/A	Illustrator: KJF
	Path:	X:\PROJECTS\101461\Graphics_Office\Rep figs\WB\2015_01_09	



Plate 11: Timber 1 recovered from beneath the east bank, west wall of the weir structure with several carpentry joints including mortises and tenons and a groove along its length



Plate 12: Timber 1. The opposing face to that shown in Plate 11. It has a diagonal groove along its length


	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	09/01/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KJF
	Path:	X:\PROJECTS\101461\Graphics_Office\Rep figs\WB\2015_01_09		



Plate 13: Timber 2 recovered from beneath the east bank, west wall of the weir structure



Plate 14: Timber 2 showing details of the groove along its length and damaged areas at one end


	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	09/01/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KJF
	Path:	X:\PROJECTS\101461\Graphics_Office\Rep figs\WB\2015_01_09		



Plate 15: Timber 3 recovered from beneath the east bank, west wall of the weir structure. The two tenons along the length of the timber are clearly visible



Plate 16: The east bank after the complete demolition of the weir structure but prior to the final re-grading of the bank


	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	09/01/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KJF
	Path:	X:\PROJECTS\101461\Graphics_Office\Rep figs\WB\2015_01_09		



Plate 17: Entrance of culvert viewed from the south



Plate 18: Southeast end of culvert (submerged, view from the north-west) unmonitored landscaping works in the background


	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	09/01/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KJF
	Path:	X:\PROJECTS\101461\Graphics_Office\Rep figs\WB\2015_01_09		



Plate 19: Interior of the culvert showing brick vault



Plate 20: Levee construction material revealed after topsoil strip, (viewed from the southwest) with rubble made ground material on the edge to the left and chalk made ground material on the edge to the right


	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	09/01/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KJF
	Path:	X:\PROJECTS\101461\Graphics_Office\Rep figs\WB\2015_01_09		



Plate 21: Representative levee construction section trench with submerged culvert to the left



Plate 22: Removal of levee material works prior to culvert removal. View from the south-east



	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	09/01/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KJF
	Path:	X:\PROJECTS\101461\Graphics_Office\Rep figs\WB\2015_01_09		



Plate 23: Culvert removal in progress and brick construction detail

	This material is for client report only © Wessex Archaeology. No unauthorised reproduction.			
	Date:	09/01/2015	Revision Number:	0
	Scale:	N/A	Illustrator:	KJF
	Path:	X:\PROJECTS\101461\Graphics_Office\Rep figs\WB\2015_01_09		



Wessex Archaeology Ltd registered office Portway House, Old Sarum Park, Salisbury, Wiltshire SP4 6EB
Tel: 01722 326867 Fax: 01722 337562 info@wessexarch.co.uk www.wessexarch.co.uk



Wessex Archaeology Ltd is a company limited by guarantee registered in England, company number 1712772. It is also a Charity registered in England and Wales, number 287786; and in Scotland, Scottish Charity number SC042630. Our registered office is at Portway House, Old Sarum Park, Salisbury, Wiltshire SP4 6EB.