

ARCHAEOLOGICAL  
EVALUATION OF  
PLOT 32 SOUTH WORCESTER,  
WORCESTER ROAD,  
BROOMHALL,  
WORCESTERSHIRE

Tom Vaughan and Jo Wainwright

With contributions by Alan Clapham, Nick Daffern and Jane Evans

Illustrations by Carolyn Hunt

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Worcestershire County Council,  
The Hive,  
Sawmill Walk,  
The Butts,  
Worcester, WR1 3PB

Project 3859  
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# Archaeological evaluation of Plot 32, South Worcester, Worcester Road, Broomhall, Worcestershire

**Tom Vaughan and Jo Wainwright**

**With contributions by Alan Clapham, Nick Daffern and Jane Evans**

## Part 1 Project summary

An archaeological evaluation was undertaken of Plot 32 South Worcester, Worcester Road, Broomhall, Worcestershire (centred on NGR SO 8527 5098).

The archaeological evaluation was undertaken on behalf of The Environmental Dimension Partnership, whose client, Welbeck Strategic Land LLP, intends to develop the site as part of the wider South Worcester scheme, for which a planning application will be submitted to Malvern Hills District Council and Worcester City Council.

This report on an archaeological evaluation describes and assesses the significance of a heritage asset with archaeological interest potentially affected by the application. The impact of the application on the significance is assessed.

The evaluation revealed evidence of extensive Roman activity, which confirms and expands upon the findings of the geophysical survey. This identified a series of conjoined rectilinear enclosures arranged around the junction of a route way aligned south-south-west to north-north-east along the east side and a secondary track aligned perpendicular to the west.

A Roman occupation horizon was observed, which appears to cover much of the western and central portion of the site and partially into the south-east corner (Trenches 4-6, 8-10). Features were both cut into and lay within this horizon, and comprised pits, postholes, ditches and gullies, a sample of which were excavated. Analysis of the occupation horizon indicates a long period of accumulation, rather than distinct phases of dumping or occupation.

Much of the pottery assemblage comprised undiagnostic body sherds that could only be dated broadly as Roman. Where forms were more closely datable, they indicate that the occupation horizon is of 2<sup>nd</sup> to early 3<sup>rd</sup> century date. It was not generally possible to assign more definite dates to the features observed either within or cut into this horizon. There was however some evidence for activity continuing into the later 3<sup>rd</sup> or perhaps even early 4<sup>th</sup> century. Other finds included extensive iron-working slag, an iron brooch, a quernstone fragment, ceramic and stone building material. The pottery included sizeable sherds with high average sherd weights, indicating that the deposits were largely undisturbed by latter activity (such as deep ploughing).

A single urned cremation was recorded, cut into the Roman occupation horizon in Trench 4. The urn was an organic tempered Severn Valley ware pot of 1<sup>st</sup> to 2<sup>nd</sup> century date, while the bone itself was radiocarbon dated to between 133-345 AD.

Environmental samples contained very little in the way of charred plant remains or animal bone. They were dominated by iron smelting and smithing debris such as slag, hammerscale, coal and charcoal, indicating that intensive industrial activity took place on the site, of which the kiln or oven observed in Trench 9 may form a part.

Possible prehistoric activity was also identified in the form of shallow ditches or gullies, probably defining enclosures, with a scattering of pits and post holes within. This predominated along the eastern side of the site, although it may also exist and be masked by the Roman occupation horizon elsewhere.

Due to the intensive nature of the remains, the undisturbed occupation horizon with features both cut into and sealed within, the density of industrial and artefactual remains and their good state of preservation, the site is considered to be of potential regional significance with the potential to address a number of research questions. Their shallowness below the current surface means that they are extremely vulnerable to disturbance from intrusive groundworks.



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## Part 2 Detailed report

### 1. Planning background

An archaeological evaluation was undertaken of Plot 32 South Worcester, Worcester Road, Broomhall, Worcestershire (centred on NGR SO 8527 5098; Fig 1), on behalf of The Environmental Dimension Partnership. Their client, Welbeck Strategic Land LLP, intends to develop the site as part of the wider South Worcester scheme, for which a planning application will be submitted to Malvern Hills District Council and Worcester City Council.

The proposed development site is considered to include a heritage asset with archaeological interest, which has been identified through a geophysical survey (ArchaeoPhysica 2012), the significance of which may be affected by the application.

The project conforms to the *Standard and guidance for archaeological field evaluation* (IfA 2008), *Standards and guidelines for archaeological projects in Worcestershire* (HEAS 2010) and *Environmental Archaeology: a guide to the theory and practice of methods, from sampling and recovery to post-excavation* (English Heritage 2011).

The project also conforms to a project design prepared by The Environmental Dimension Partnership (EDP 2012a), for which a project proposal (including detailed specification) was produced (Worcestershire Archaeology 2012).

### 2. Aims

The aims of this archaeological evaluation were:

- to describe and assess the significance of the heritage asset with archaeological interest;
- to establish the nature, importance and extent of the archaeological site;
- to assess the potential impact of the application on the archaeological site.

### 3. Methods

#### 3.1 Documentary search

A full documentary search was undertaken as part of a baseline archaeological and heritage assessment, prepared by The Environmental Dimension Partnership (EDP 2012b). No further searches were undertaken prior to commencement of fieldwork.

#### 3.2 Fieldwork methodology

##### 3.2.1 Fieldwork strategy

A detailed specification has been prepared by the Service (Worcestershire Archaeology 2012a).

Fieldwork was undertaken between 30 April and 15 May 2012. The site reference number and site code is WSM 46461.

Ten trenches, amounting to just over 1,089m<sup>2</sup> in area, were excavated across the site. The locations of the trenches are indicated in Figure 2. The trenches were located to test features identified in the geophysical survey and, in the areas where features were absent, to assess the extent of the archaeological site identified during the geophysical survey (ArchaeoPhysica 2012).

Deposits considered not to be significant were removed under archaeological supervision using a 360° tracked excavator, employing a toothless bucket. Subsequent excavation was undertaken by hand. Clean surfaces were inspected and selected deposits were excavated to retrieve artefactual material and environmental samples, as well as to determine their nature. Deposits were recorded according to standard Service practice (Worcestershire Archaeology

2012b). The spoil was swept with a metal detector. On completion of the fieldwork the trenches were reinstated by replacing the excavated material.

### 3.2.2 Structural analysis

All fieldwork records were checked and cross-referenced. Analysis was effected through a combination of structural, artefactual and ecofactual evidence, allied to the information derived from other sources.

## 3.3 Artefact methodology, by Jane Evans

### 3.3.1 Artefact recovery policy

The artefact recovery policy conformed to standard Service practice (Worcestershire Archaeology 2012b; appendix 2). All finds were recovered from stratified deposits, from the topsoil and an occupation horizon associated with features. Other finds from these layers were sampled.

### 3.3.2 Method of analysis

All hand-retrieved finds were examined. They were identified, quantified and dated to period. A *terminus post quem* date was produced for each stratified context. The date was used for determining the broad date of phases defined for the site. A small quantity of Roman pottery was retrieved from environmental samples. As this was retrieved after the finds report was completed, it is not included in the report below, nor included in the Table 2 quantification. Also from the environmental samples (4010 <1>) came an iron hobnail and a corroded iron fragment, possibly part of a brooch.

Pottery fabrics are referenced to the fabric reference series maintained by the Service (Hurst 1994).

## 3.4 Environmental archaeology methodology, by Alan Clapham

### 3.4.1 Sampling policy

The environmental sampling strategy conformed to standard Service practice (Worcestershire Archaeology 2012b; appendix 4).

Samples were taken from deposits considered to be of high potential for the recovery of environmental remains. A total of nine samples were taken, of which four were assessed (Table 1).

Sample	Context	Description	Sample size (L)	Assessed
1	4010	ditch fill	20	Yes
2	6003	posthole fill	30	No
3	6005	post pipe fill	20	No
4	4007	upper middle fill of ditch [4008]	10	No
5	4009	lower fill of ditch [4006]	10	Yes
6	4014	middle fill of ditch [4008]	10	No
7	4012	lower fill of ditch [4008]	20	Yes
8	9005	upper fill of pit [9007]	20	No
9	9006	lower fill of pit [9007]	20	Yes

Table 1 Environmental samples

### 3.4.2 Method of analysis

The samples were processed by flotation using a Siraf tank. The flots were collected on a 300µm sieve and the residue retained on a 1mm mesh. This allows for the recovery of items such as small animal bones, molluscs and seeds.



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The residues were scanned by eye and the abundance of each category of environmental remains estimated. A magnet was also used to test for the presence of hammer scale. The flots were scanned using a low power MEIJI stereo light microscope and plant remains identified using modern reference collections maintained by the Service, and a seed identification manual (Capper *et al* 2006). Nomenclature for the plant remains follows the *New Flora of the British Isles*, 3<sup>rd</sup> edition (Stace 2010).

### 3.4.3 Radiocarbon dating, by Nick Daffern

Two samples from Trench 4 were submitted for Accelerator Mass Spectrometry (AMS) dating to the Scottish Universities Environmental Research Centre (SUERC) radiocarbon dating laboratory.

The first sample (SUERC-40350; GU27696) consisted of a fragment of cremated human bone recovered from cremation (4016), which was identified as cutting Roman occupation horizon (4002).

The second sample (SUERC-40351; GU27697) was a fragment of *Corylus avellana* (hazel) charcoal which came from the basal levels of Roman occupation horizon (4002).

It is hoped that the dates will provide a bracket into which the deposition/formation of the soil horizon can be assigned and thus refine our understanding of the site's development.

No sources of contamination or non-contemporaneous carbon were evident during the fieldwork or during the sub-sampling.

### 3.5 Statement of confidence in the methods and results

The methods adopted allow a high degree of confidence that the aims of the project have been achieved.

## 4. Topographical and archaeological context

A baseline archaeological and heritage assessment has been undertaken by The Environmental Dimension Partnership (EDP 2012b), which contains all of the available information on the topographical and archaeological background to the site. In addition, a geophysical survey was undertaken by ArchaeoPhysica in 2012. This identified remains of possible Roman or World War Two activity at the site.

## 5. Results

### 5.1 Structural analysis

The trenches and features recorded are shown in Figs 3-7. The results of the structural analysis are presented in Appendix 1.

#### 5.1.1 Phase 1: Natural deposits

In the eastern part of the site, the natural consisted of red clays or marls. In the western part of the site, in Trench 9 and in the western end of Trench 5, the natural comprised sands and gravels of the river terrace above the River Severn. The depth of the natural below the surface was largely consistent across the site at 0.47-0.60m, with the exception of Trench 10, towards the south-east corner, where it lay at 0.90m depth.

#### 5.1.2 Phase 2: Prehistoric deposits

One residual flint flake was recovered from the fill of pit (9005) in Trench 9, towards the south-west corner of the site.

No other prehistoric material or dated deposits were identified. However, there were a number of features whose character suggests an early, potentially prehistoric date. Their fills were indistinct, generally lighter grey and leached of organics and minerals, which is often indicative of an earlier date. They were predominantly observed in Trenches 1-3, 6 and 7

within the eastern half of the site (Figs 2, 3 & 6). Few were excavated during the evaluation, although they took the form of shallow linears, such as (2003) and (2005) (Plate 11), small pits and postholes. They may extend into other areas of the site and remain sealed below the Roman occupation horizon observed in Trenches 4-6 and 8-10 (Fig 2).

#### 5.1.3 **Phase 3: 2<sup>nd</sup> to early 3<sup>rd</sup> century deposits** (Figs 4-7)

A Roman occupation horizon was observed in Trenches 4-6 and 8-10 (layers 4002, 5002, 6007, 6008, 8002, 9002 and 10002; Figs 2, 4-6; Plates 1-8). The finds from these deposits have been dated to the late 2<sup>nd</sup> to early 3<sup>rd</sup> centuries. The layer was generally no more than 0.20m thick, and lay directly over the natural. It was however not homogenous across the site. It was darker and contained more finds in the intersection of Trenches 4, 5 and 8 toward the west side. This deposit became thinner and lighter in colour towards the ends of these trenches. In Trench 6 it was only seen in the eastern end (6007 and 6008), although it may have been ploughed out to the west. In Trenches 9 and 10 this deposit was lighter (9002). It was composed largely of silty clay, although occasionally sand was also present, derived from the underlying sands and gravels which are predominant to the west.

A large number of ditches, gullies and pits were observed to be both cut into and lie within this occupation layer, particularly within Trenches 4, 5, 8 & 9 (Figs 4, 5 & 7). Although it was only possible to excavate a small sample of these features, the majority were dated to the late 2<sup>nd</sup> to 3<sup>rd</sup> century or contained generic pottery of general Roman date.

In Trench 4, two ditches (4006 and 4008) shared an upper fill which was dated to the Roman Period (Plate 2). Also in Trench 4, a ditch (4010) contained fills which were rich in charcoal and iron slag (Plate 3). Similar fills of ditches were also observed across Trenches 4, 5 and 8.

A small circular pit (4018) containing an urned cremation (4016/4017) was identified toward the middle of Trench 4, cut through the Roman occupation horizon (4002; Plate 5). Although left in situ, it was cleaned and recorded, the pottery was identified (see Section 5.2 below), and a sample of bone extracted to obtain a radiocarbon date (see Section 6 below).

In Trench 5, finds recovered from the top fill of a ditch (5005) were also dated to the late 2<sup>nd</sup> to early 3<sup>rd</sup> centuries (Plate 6). To the south, in Trench 9, a pit (9007) contained fills rich in hammerscale.

In Trench 6, a series of occupation surfaces were uncovered (6008, 6009 and 6010; Plate 6). These were constructed of varying amounts of iron slag. A large posthole (6004) cut through layer (6007). Although undated, it produced quantities of iron slag suggesting that this feature was associated with the surfaces. A similar feature to the east may be a posthole (Plate 7).

In Trenches 1 and 2, two ditches (1004) and (2029) produced finds from the 2<sup>nd</sup> to 3<sup>rd</sup> centuries (Fig 3; Plate 9). These ditches were identified on the geophysical survey and probably represent two sides of an enclosure. An unexcavated spread of material (2048) in the eastern end of Trench 2 produced pottery dating from the late 2<sup>nd</sup> to 3<sup>rd</sup> century.

The majority of the features exposed during the evaluation were not excavated. However, in Trenches 4, 5, 8, 9 and 10, and in the eastern part of Trench 6, the features were all cut into the Roman occupation horizon. Therefore, they must date from the late 2<sup>nd</sup> century to early 3<sup>rd</sup> century or later. Where this Roman occupation horizon was not present, in Trenches 1, 2, 3, 7 and part of Trench 6, the majority of unexcavated features are projected to be of similar date due to their comparable reddish fills.

#### 5.1.4 **Phase 4: later 3<sup>rd</sup> to early 4<sup>th</sup> century deposits**

The upper soil layers, above the defined occupation horizon, within Trenches 2 and 4, contained a small number of pottery sherds of later 3<sup>rd</sup> or perhaps even early 4<sup>th</sup> century date, although material of the 2<sup>nd</sup> to 3<sup>rd</sup> centuries predominated.

Only one feature that produced finds could be dated to the 4<sup>th</sup> century. This was cut (9009) which contained large fragments of fired clay which are considered to be the remains of a collapsed roof of an oven or kiln (9008) with an associated oven plate (Fig 7; Plate 10). Two similar features were identified close by, but were unexcavated at this stage.

### 5.1.5 Phase 4: Post-medieval deposits

A small quantity of post-medieval pottery was recovered from unstratified contexts, which probably represents manuring of agricultural fields. There was no evidence of widespread or intensive deep ploughing across the site.

### 5.2 Artefact analysis, by Jane Evans

The artefactual assemblage recovered is summarised in Table 2. Finds included Roman pottery, tile, stone and iron working debris, along with a small assemblage of post-medieval finds. The group came from 22 stratified contexts and 14 contexts associated with topsoil or subsoil layers. Although some fairly substantial sherds were recovered, providing evidence of form and thus dating, the pottery was generally highly abraded.

period	material class	material class sub-type	object specific type	count	weight (g)
Prehistoric	Stone	Flint	Flake	1	6
Roman	ceramic		Pot	372	9373
Roman	ceramic		oven plate	4	186
Roman/undated	ceramic		ceramic building material	55	5004
Roman	Glass		Vessel	1	6
Roman/undated	Metal		iron slag		12930
post-medieval	ceramic		Pot	17	330
post-medieval	ceramic		clay pipe	1	8
post-medieval	Glass		Vessel	1	4
Undated	Organic		Coal		62
Undated	Bone	animal bone	Assorted	8	113
Undated	Stone		Assorted	21	17391
Undated	Plaster			1	28
Undated	fired clay		unidentified	8	128
Undated	Metal	Iron	Assorted	2	470
Undated	Metal	copper alloy	ring fragment	1	1
Total				490	30975

Table 2: Quantification of the assemblage

#### Prehistoric finds

The only prehistoric find was a flint flake from pit fill (9005), showing signs of slight burning. It could not be dated to period.

#### Roman pottery

The 372 sherds of Roman pottery were scanned and quantified by count and weight by context (see Table 2). The presence of various fabrics and diagnostic forms was noted, but these were not quantified in detail.

The majority of the Roman pottery came from the topsoil and earlier soil horizons (75% by weight), particularly from soils (4000) (69 sherds, 23% by weight) and (4001) (119 sherds, 31% by weight). The pottery from these upper layers included sizeable sherds with high average sherd weights, indicating that the deposits had not been badly disturbed by ploughing. Some of the stratified contexts also had high average sherd weights suggesting largely undisturbed deposits, notably Roman occupation horizon (4002), ditch fills (4012, 4019 and 5005) and oven or kiln fill (9008). The latter included the complete profile of a tankard.

Most of the pottery comprised Severn Valley ware, mainly the standard fabric (fabric 12), but also including sherds of organic-tempered ware (fabric 12.2). Other fabrics included Black-burnished ware (BB1; fabric 22), hand-made and wheel-made Malvernian ware (fabrics 3 and 19), Mancetter/Hartshill mortaria (fabric 32), and samian (fabric 43).

#### Dating

Much of the assemblage comprised undiagnostic body sherds that could only be dated broadly as Roman. Where forms were more closely datable, they suggested a period of 2<sup>nd</sup> century activity on the site. Many of the Severn Valley ware forms were broadly 2<sup>nd</sup> to 3<sup>rd</sup> century types. These included tankards with moderately splayed walls, as well as a range of jars with overhanging rims, bowls with flanged and reeded rims, and a colander. The samian included the base of a Dr 18/31 bowl probably dating to c AD 120-150, and a fragment from a Dr 27 cup, of a similar date (both from topsoil 4000); the stamped base from a Dr 31 bowl, dating to the mid to late 2<sup>nd</sup> century and the flange from a Dr 38 bowl, dating to the second half of the 2<sup>nd</sup> century (soil 4001); and a decorated body sherd, probably also dating to the 2<sup>nd</sup> century (topsoil 5000). A large rim fragment from a Mancetter/Hartshill mortaria (topsoil 4000) probably dates to the latter half of the 2<sup>nd</sup> century. Amongst the stratified deposits, ditch fill 5005 produced a rim from a typically 2<sup>nd</sup> century Malvernian tubby cooking pot, and the rim from a Black-burnished ware (BB1) flat-flanged bowl; the latter being a diagnostically 2<sup>nd</sup> century type. Primary ditch fill 4012 produced the rim of a plain-rimmed BB1 dish, dating to the late 2<sup>nd</sup> to early 3<sup>rd</sup> century.

There was also some evidence for activity on the site continuing into the later 3<sup>rd</sup> or perhaps even early 4<sup>th</sup> century. Trench 2 contained an unstratified rim of a BB1 jar with a splayed rim and obtuse cross-hatch decoration, typical of this date, while soil layer 4001 produced a very fragmentary rim from a BB1 flange-rimmed bowl, and another jar fragment decorated with obtuse cross-hatch. The complete profile of a tankard mentioned above, from oven or kiln fill (9008) was a splayed type, typical of the 4<sup>th</sup> century, and a Severn Valley ware jar with a pulley rim from soil (4001) is also a characteristically late 3<sup>rd</sup> to 4<sup>th</sup> century type.

A critical question is the date of the cremation and the occupation horizon (4002) through which it was cut. A single sherd from the vessel containing the cremation (4017) was identified during the excavation, although it is not included in the quantifications presented here, as it was returned to the deposit. The sherd was in an organic tempered Severn Valley ware fabric, suggesting a 1<sup>st</sup> to 2<sup>nd</sup> century date. The cremation was cut into Roman occupation horizon (4002). This produced 23 sherds, most of which were not closely datable, although one tankard rim indicated a date in the late 2<sup>nd</sup> to early 3<sup>rd</sup> for this deposit.

#### *Other Roman artefacts*

Other Roman finds included a fragment of blue/green vessel glass from primary ditch fill (4012) and a few pieces of Malvernian oven plate from occupation horizon (4002) and oven or kiln fill (9008). A couple of *tegula* fragments were identified amongst the ceramic building material from topsoil (4000) and occupation horizon (4002) and fragments of sandstone, Roman roof tile was noted amongst the stone from topsoil (4000) and oven or kiln fill (9008). Much of the ceramic building material, however, could not be dated. The stone assemblage included a large fragment of quernstone, in a conglomerate sandstone; a block of red sandstone possibly used for building; and a fragment of blue lias, which may have been used for paving. These all came from soil (4001), so are not necessarily Roman, although their association with quantities of Roman pottery makes this likely. The site also produced fragments from pot boilers, used in cooking in the Iron Age and perhaps early Roman period, from soils (4000, 4001, 4002 and 5001) and ditch fill (5005) and a few pebbles.

Significant quantities of iron-working slag were recovered. Some of this came from stratified Roman deposits (in particular ditch fills (1003, 2027, 4010 and 5005)), although the majority came from topsoil and earlier soil horizons (in particular 4000, 4001 and 5001). It is assumed that this also relates to Roman activity on the site. The slag included waste from both smelting and smithing (Dennis Williams, pers comm). The coal and fragments of fired clay may also be associated with iron working.

#### *Post-medieval finds*

Small quantities of post-medieval pottery were recovered (Table 2). Most interesting were a couple of fragments of slip-decorated red ware (fabric 78), dated to the 17<sup>th</sup> or 18<sup>th</sup> centuries, and a vessel base in a Cistercian-type ware (also fabric 78) probably dating to the 17<sup>th</sup> century. These came from Trench 6, from soils (6000 and 6001). Trench 2 produced a small bowl from a clay pipe, probably dating to the mid 17<sup>th</sup> century. Also of interest was a ceramic spacer, used in the firing of porcelain, dating to the mid 18<sup>th</sup> century or later.

### 5.3 Environmental analysis, by Alan Clapham

#### 5.3.1 Charred plant remains

Of the nine samples taken on site, four were selected for environmental analysis (Table 1). The plant remains present within the samples were preserved by charring and overall there were few remains present in any of them (Table 4).

Charred plant remains were identified from ditch fills (4010 and 4012) and pit fill (9006), usually consisting of single finds. A spelt wheat (*Triticum spelta*) glume base was identified from (4012), along with a wheat (*Triticum* sp) grain, a fragment of hazel (*Corylus avellana*) nutshell fragment and vetch/vetchling (*Vicia/Lathyrus* sp) seed. A wheat grain was found in (4010) and an indeterminate cereal grain fragment was noted in (9006).

All four contexts contained large numbers of small fragments of charcoal. Unfortunately, these fragments were too small to be identifiable.

Apart from charred plant remains, other biological material recovered included small fragments of large mammal bone, but again it was too fragmented to be identifiable.

Non-biological material dominated the flots and residues. This included large fragments of slag, along with large quantities of spherical and flake hammerstone. Coal fragments were also abundant in the samples, with the occasional heat-cracked stone fragment. Pot fragments were recovered from (4010, 4012 and 9006) and brick was recovered from (4010 and 4012). Iron artefacts, in the form of a nail and a possible brooch were retrieved from (4010).

Context	Animal bone	Pottery	Brick	Fe slag	Fe objects	Spherical hammerstone	Flake hammerstone	Coal	Heat-cracked stone	Comments
4010	occ – burnt	occ	occ	v abun	Occ	v abun	v abun	abun	occ	Fe objects include nail and possible brooch
4009							occ		occ	
4012	occ – burnt	occ	occ	v abun		abun	v abun	abun	occ	
9006		occ		v abun		v abun	v abun	abun	occ	

Table 3 Summary of other biological and artefactual remains recovered from the sample residues

Latin name	Common name	Habitats	4010	4009	4012	9006
<b>Charred</b>						
<i>Triticum spelta</i> glume base	spelt wheat	F			+	
<i>Triticum</i> sp grain	Wheat	F	+		+	
Cereal sp indet grain fragment		F			+	+
<i>Corylus avellana</i> nutshell fragment	Hazel	C			+	
<i>Vicia/Lathyrus</i> sp	vetch/vetchling	ABCD			+	
Charcoal fragments			++++	++++	++++	+++
<b>Other remains</b>						
Coal fragments			++	++	++	+++
Spherical hammer scale			++++	+	++++	++++
Flake hammer scale			+++		+	
Burnt bone fragments					+	

Table 4 Charred plant and other remains recovered from the flots assessed

Habitat	Quantity
A= cultivated ground	+ = 1 - 10
B= disturbed ground	++ = 11 - 50
C= woodlands, hedgerows, scrub etc	+++ = 51 - 100
D = grasslands, meadows and heathland	++++ = 101+
E = aquatic/wet habitats	
F = cultivar	

Key to Table 4

## 6. Radiocarbon dating

### 6.1.1 Results, by Nick Daffern

All calibrated dates are identifiable by the prefix 'Cal'. Where calibrated date ranges are cited in the text, these are for 95.4% confidence.

Laboratory code	Context number	Material	$\delta^{13}\text{C}$ relative to VPDB	Radiocarbon Age BP	OxCal calibrated age (95.4% probability or 2 sigma)
GU27696	4016	Cremated human bone	-22.1‰	1775 ± 35	133-345 AD
GU27697	4002	<i>Corylus avellana</i> (hazel) charcoal	-24.7‰	1865 ± 35	72-235 AD

Table 5 Radiocarbon dates

### 6.1.2 Discussion

The radiocarbon date results are rather broad, indicating a period of 200 years for the cremation, and 150 years for the basal layer of the Roman occupation horizon (at 95.4% probability). Although they do not give very specific dates, they do confirm the stratigraphic relationships (the cremation was cut through the upper surface of the Roman occupation horizon), and the dating from the pottery (1<sup>st</sup> or 2<sup>nd</sup> century cremation urn and 2<sup>nd</sup> to early 3<sup>rd</sup> century Roman occupation horizon).

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## 7. **Soil horizon, by Nick Daffern**

The soil horizon described throughout this report as the Roman Occupation Horizon was examined on site by the author in several locations and was found to be a light brownish yellow silt with occasional clayey lenses, which became lighter pinkish yellow towards its base. Occasional rootlets and bioturbation were noted, as were rare stains and fragments of charcoal and unidentifiable ceramic building material and pottery (< 0.5cm).

The rare presence of platy soil structures may be indicative of compacted soil horizons, which would support the theory of a gradual accumulation, rather than large scale dumping of material.

## 8. **Synthesis**

### 8.1 **Prehistoric**

One residual struck flint flake was recovered from the site. This suggests that ephemeral prehistoric activity was taking place either on or within the vicinity of the site.

The undated features identified in Trenches 1-3 and 6 and 7 are conjectured to date from the Iron Age, although they could potentially be earlier. They comprise a scatter of gullies or ditches, pits and postholes which did not generally relate to the features identified in the geophysical survey, but may relate to enclosures and occupation activity.

The spread of this activity seems to be concentrated on the east side of the site. However, it cannot be discounted that other, probably related, prehistoric features exist to the west underneath the Roman occupation horizon. For example, in Trenches 4, 8 and 9 the parallel east-north-east to west-south-west aligned ditches conjectured to relate to an earlier track or driveway were not identified. These features may exist, underlying the Roman occupation horizon, which was not removed during the evaluation.

### 8.2 **2<sup>nd</sup> to early 3<sup>rd</sup> century activity**

The main period of activity on the site is from the 2<sup>nd</sup> to early 3<sup>rd</sup> century. An occupation horizon was uncovered across the western and central area of the site, although it also extended into the south-eastern part of the site. This deposit appears to be the result of gradual accumulation, with little indication of distinct horizons within it.

This layer contained and was cut by a large number of features. These consisted mainly of ditches, which were concentrated to the north-west, whereas to the south-west there were fewer ditches but more pits. The ditches appear to relate to the rectilinear enclosures identified in the geophysical survey, although a great many additional features were observed which had not been identified in the survey, whilst others may also remain masked by the occupation horizon.

The alignments of the main north to south and the ancillary east to west aligned routes identified in the geophysical survey may be surmised by the lack of cut features recorded in Trenches 2 and 4. Only in one area, Trench 6, was a metalled surface identified which may correspond with a trackway.

The density of features toward the west and centre of the site appears to indicate that this was the focus of occupation and activity, whereas the areas to the north and south may have been used for agricultural purposes in the form of stock enclosures. Building stone, roofing and floor material was recovered from the occupation horizon, which suggests that buildings in the vicinity may have been more than simple crude wooden structures.

The quantity of artefacts supports the structural evidence, that this was a relatively well appointed Roman site. The size of the sherds suggests well-preserved archaeology, although sherds were heavily abraded. This latter condition is likely to be the result of burial conditions, rather than disturbance.

The pottery assemblage indicates activity from the 2<sup>nd</sup> century continuing into the early 3<sup>rd</sup> century. The radiocarbon date obtained from the lower layer of the occupation horizon was

72-235, which, while broad, fits within this period. No diagnostically 1<sup>st</sup> century pottery was identified within the assemblage. Although the cremation pot may be of 1<sup>st</sup> to 2<sup>nd</sup> century date, the radiocarbon date from the cremated bone is from 133-345 AD.

There is clear evidence for intensive iron working on the site, smelting and smithing. This is not unsurprising and has parallels at other Roman sites along the River Severn, such as Bath Road (WCM 98628) to the north, south of Crookbarrow Hill (WSM 10176) to the east, and particularly in Worcester itself, which was a centre for iron smelting through much of the period.

Overall, the results of the environmental assessment were very poor. The samples were dominated by industrial waste including slag, hammerscale and coal fragments. The presence of the small numbers of charred plant remains is indicative of a "background flora". As charred plant remains are resilient to decay, they can be transported across the site and be deposited in features not related to original production. The presence of both charcoal and coal fragments suggests that both types of fuel were used in the industrial processes being carried out on this site.

### 8.3 **Later 3<sup>rd</sup> to early 4<sup>th</sup> century activity**

The pottery assemblage also indicates activity in the late 3<sup>rd</sup> or early 4<sup>th</sup> century. It is unclear if this is a continuation from the early 3<sup>rd</sup> century or was re-established. No diagnostically later 4<sup>th</sup> century pottery was identified.

Only one feature, an oven or kiln in the south-west corner, can be dated to the 4<sup>th</sup> century. Two similar features were identified adjacent. It is possible that the focus of activity in this period had shifted south. However, because the majority of features were not excavated, other 4<sup>th</sup> century features may exist.

### 8.4 **Post-medieval/modern activity**

The post-medieval activity is limited to residual finds deposited during manuring, whilst intensive ploughing is considered to have been rarely undertaken on the site, due to the good state of preservation of the earlier features as discussed above.

## 9. **Significance**

### 9.1 **Significance of a heritage asset with archaeological interest**

The aim of an archaeological evaluation is to provide the client and the planning authority (and its advisors) with sufficient information to assess the significance of a heritage asset with archaeological interest, in line with *National Planning Policy Framework* (DCLG 2012, para 128). Detailed guidance on assessing the significance of a heritage asset with archaeological interest is set out in the *Historic Environment Planning Practice Guide*, which advises that an on-site evaluation should establish the nature, importance and extent of the archaeological interest in order to provide sufficient evidence for confident prediction of the impact of the proposal (DCLG/DCMS/EH 2010: Section 5, Development Management).

### 9.2 **Assessment of significance**

The on-site evaluation has provided new evidence on a site with archaeological interest. As a result, an assessment of the significance of this site can be made in terms of the nature, importance and extent of the archaeological interest.

#### *Nature of the archaeological interest in the site*

The heritage assets with archaeological interest identified are of possible prehistoric and definitely of Roman date.

The possible prehistoric activity takes the form of shallow ditches or gullies, probably defining enclosures, with a scatter of pits and postholes within. The Roman activity takes the form of well-defined rectilinear ditched enclosures, with extensive internal ditches, pits and postholes. They lie within and are cut into a developed occupation horizon. These features



accord well with the results of the geophysical survey, although there are also many more features present than this survey indicated, whilst the Roman occupation soil may also mask further features below.

The function of the possible prehistoric features is unclear, although the lack of finds may indicate agricultural use rather than direct occupation. The Roman activity is clearly intensive, although the lack of animal bone and the large quantity of iron slag, hammerscale, coal and charcoal indicates industrial activity in the form of iron smelting and smithing, rather than simple domestic occupation.

The large quantity of pottery recovered, even given the small sample of features excavated, indicates that the site was materially rich, and coupled with the industrial evidence, was directly and intimately connected with the local and national economy, via the River Severn immediately to the west and the Worcester to Gloucester road to the east (WCM 96406 / WSM 30539).

The possible prehistoric activity is undated, although it is potentially attributable to the Iron Age. The Roman activity is primarily of 2<sup>nd</sup> and early 3<sup>rd</sup> century date, although it appears to have continued into, or been re-established in, the later 3<sup>rd</sup> to early 4<sup>th</sup> century. It was not possible to phase the activity beyond this extent at this stage.

A single urned cremation was identified, cut into the Roman occupation horizon, with a radiocarbon date of 133-345 AD, although the urn itself is of the 1<sup>st</sup> to 2<sup>nd</sup> century. The potential for further human remains to exist on the site must be considered to be high.

#### *Relative importance of the archaeological interest in the site*

Although rural Roman sites are not rare within the area, the density of features, the good state of preservation of features and artefacts and the presence of an extant occupation horizon mean that this site must be considered to be of potential regional significance, with a high potential to address research priorities, notably regarding the hinterland of Roman Worcester, the Roman iron and smithing industry (Worcester City Council 2007, RP3.19-23 and 3.31), the character of rural settlements, and the relationship between the agricultural, industrial and domestic life of settlement types (Lockett 2002, 2-4 & 7).

#### *Physical extent of the archaeological interest in the site*

The main focus is the central and western portion of the site, where the well developed Roman occupation horizon was observed within Trenches 4, 5, 8 and 9, although it extends sporadically into Trenches 6 and 10 to the south-east. In the former, it both contains and is cut by a dense sequence of features, as described above. These features (particularly those within the occupation horizon, but also cut into it) have survived well and are well preserved, as deep or intensive ploughing does not appear to have been undertaken to any degree within this field at any time. Thus the Roman artefactual assemblage is also well preserved.

The possible prehistoric activity observed around the periphery of the site is less well preserved, although it is likely that it continues below and is masked by the Roman occupation horizon, where it has the potential to be better preserved.

The features and layers revealed lie at a shallow depth below the current ground surface, generally 0.40m, although up to 0.75 in Trench 10 to the south-east. They are therefore considered to be extremely vulnerable to disturbance from intrusive groundworks

## 10. **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 evaluation was undertaken on behalf of Welbeck Strategic Land LLP, at Plot 32 South Worcester, Worcester Road, Broomhall, Worcestershire (NGR SO 8527 5098; HER ref. WSM 46461).*

*The evaluation revealed evidence of extensive Roman activity, which confirms and expands upon the findings of the geophysical survey. This identified a series of conjoined rectilinear enclosures arranged around the junction of a track aligned south-south-west to north-north-east along the east side and a secondary track aligned perpendicular to the west.*

*A Roman occupation horizon was observed, which appears to cover much of the western and central portion of the site and partially into the south-east corner. Features were both cut into and lay within this horizon, and comprised pits, postholes, ditches and gullies, a sample of which were excavated. Analysis of the occupation horizon indicates a long period of accumulation rather than distinct phases of dumping or occupation.*

*Much of the pottery assemblage comprised undiagnostic body sherds that could only be dated broadly as Roman. Where forms were more closely datable, they indicate that the occupation horizon is of 2<sup>nd</sup> to early 3<sup>rd</sup> century date. It was not generally possible to assign more definite dates to the features observed either within or cut into this horizon. There was however some evidence for activity continuing into the later 3<sup>rd</sup> or perhaps even early 4<sup>th</sup> century. Other finds included extensive iron-working slag, an iron brooch, a quernstone fragment, ceramic and stone building material. The pottery included sizeable sherds with high average sherd weights, indicating that the deposits were largely undisturbed by latter activity (such as deep ploughing).*

*A single urned cremation was recorded, cut into the Roman occupation horizon. The urn was an organic tempered Severn Valley ware pot of 1<sup>st</sup> to 2<sup>nd</sup> century date, while the bone itself was radiocarbon dated to between 133-345 AD.*

*Environmental samples contained very little in the way of charred plant remains or animal bone. They were dominated by iron smelting and smithing debris such as slag, hammerscale, coal and charcoal, indicating that intensive industrial activity took place on the site, of which the kiln or oven observed toward the south-west side of the site may form a part.*

*Possible prehistoric activity was also identified in the form of shallow ditches or gullies, probably defining enclosures, with a scattering of pits and postholes within. This predominated along the eastern side of the site, although it may also exist and be masked by the Roman occupation horizon elsewhere.*

*Due to the intensive nature of the remains, the undisturbed occupation horizon with features both cut into and sealed within, the density of industrial and artefactual remains and their good state of preservation, the site is considered to be of potential regional significance with the potential to address a number of research questions. Their shallowness below the current surface means that they are extremely vulnerable to disturbance from intrusive groundworks.*

## 11. **Acknowledgements**

The Service would like to thank the following for their kind assistance in the successful conclusion of this project, Andrew Crutchley (Associate, The Environmental Dimension Partnership), Mike Glyde (Historic Environment Planning Officer, Worcestershire County Council) and James Dinn (Archaeological Officer, Worcester City Council).

## 12. **Personnel**

The fieldwork was led by Jo Wainwright. The report preparation was led by Tom Vaughan, with input from Jo Wainwright. The project manager responsible for the quality of the project was Tom Vaughan. Fieldwork was undertaken by Chris Gibbs, Mike Nicholson and Tim Cornah, finds analysis by Jane Evans, environmental analysis by Alan Clapham and illustration by Carolyn Hunt.

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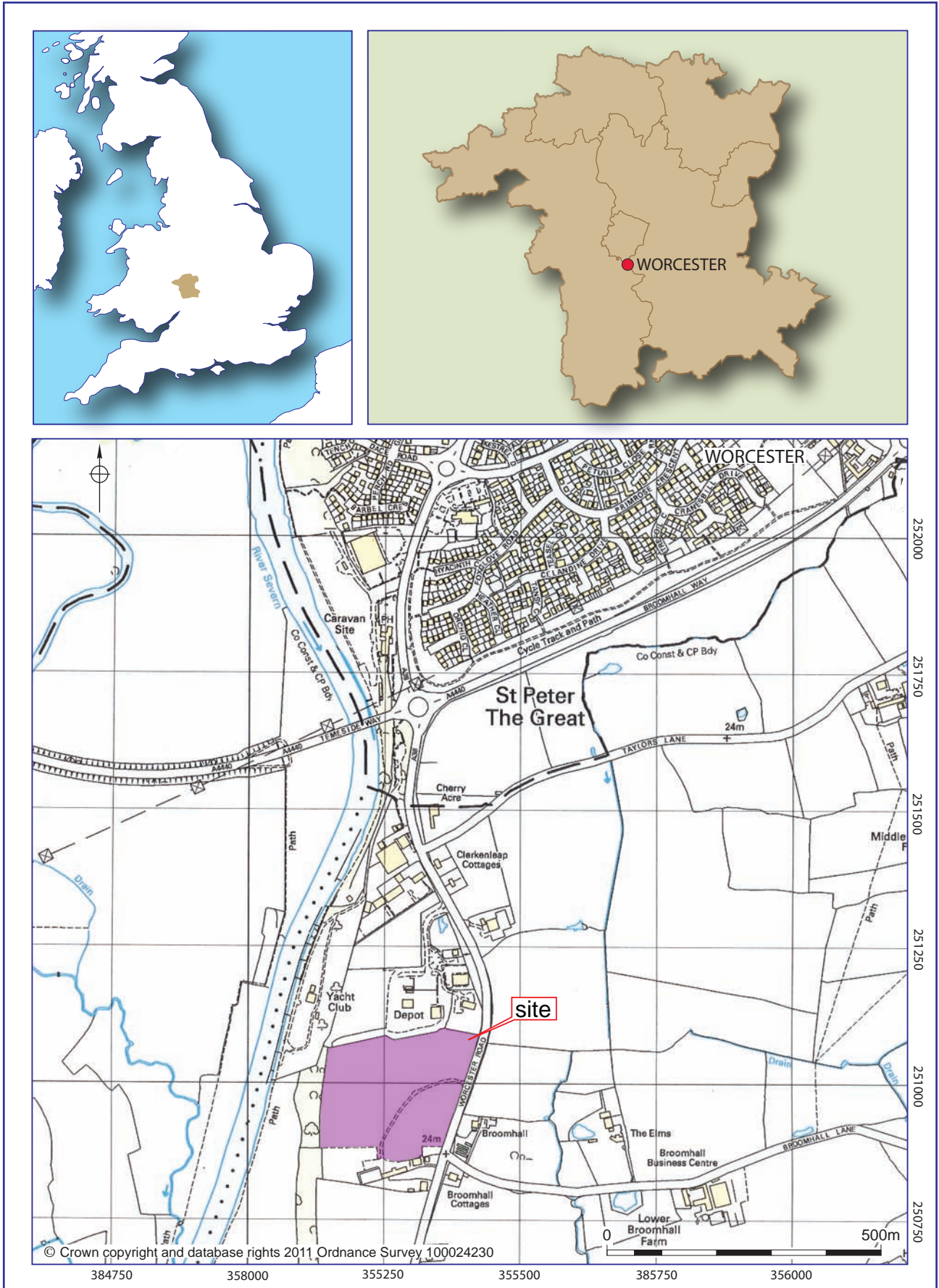
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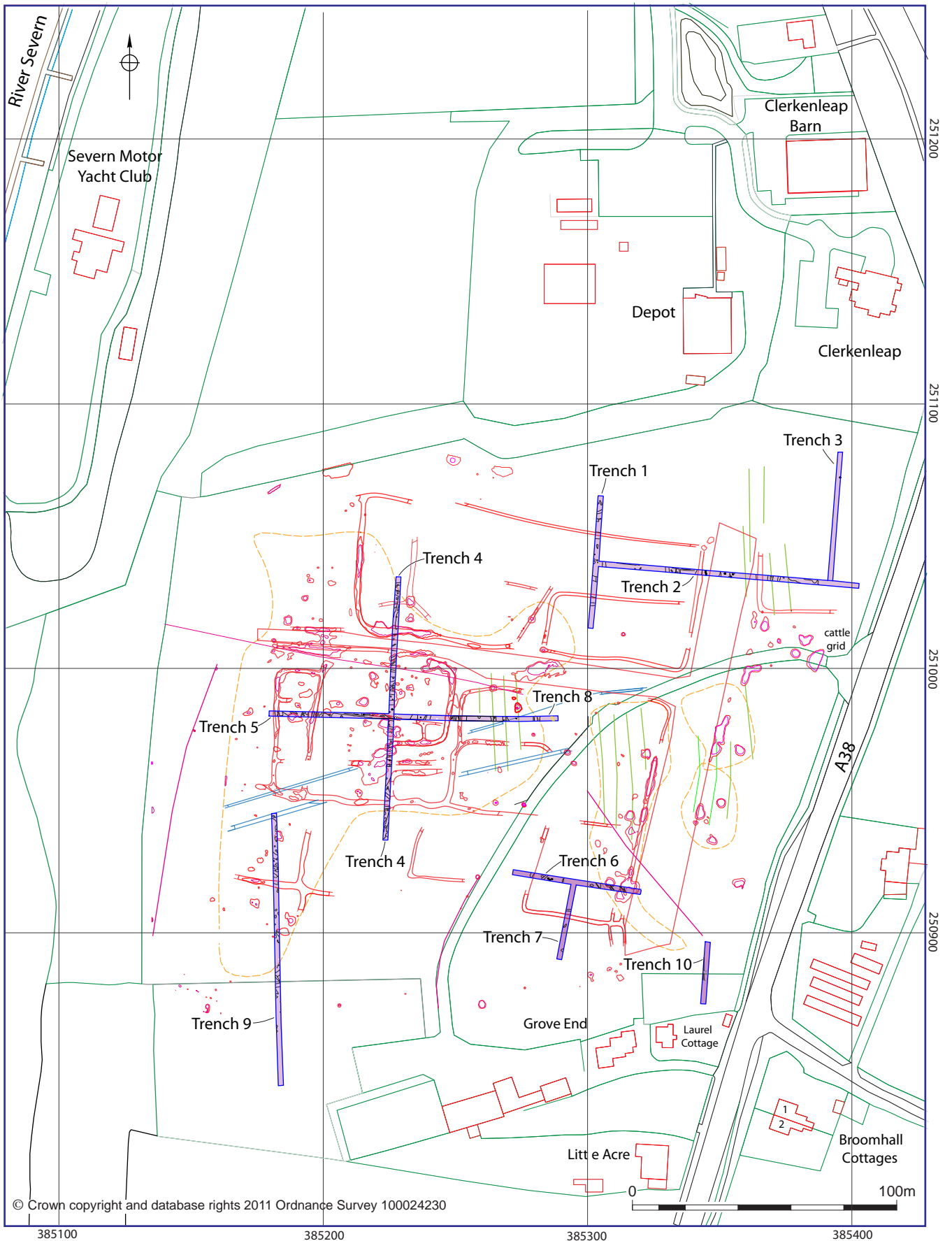
Worcestershire Archaeology 2012b *Manual of Service Practice: recording manual*, Worcestershire Archaeology, Worcestershire County Council, unpublished report, **1842**

# Figures



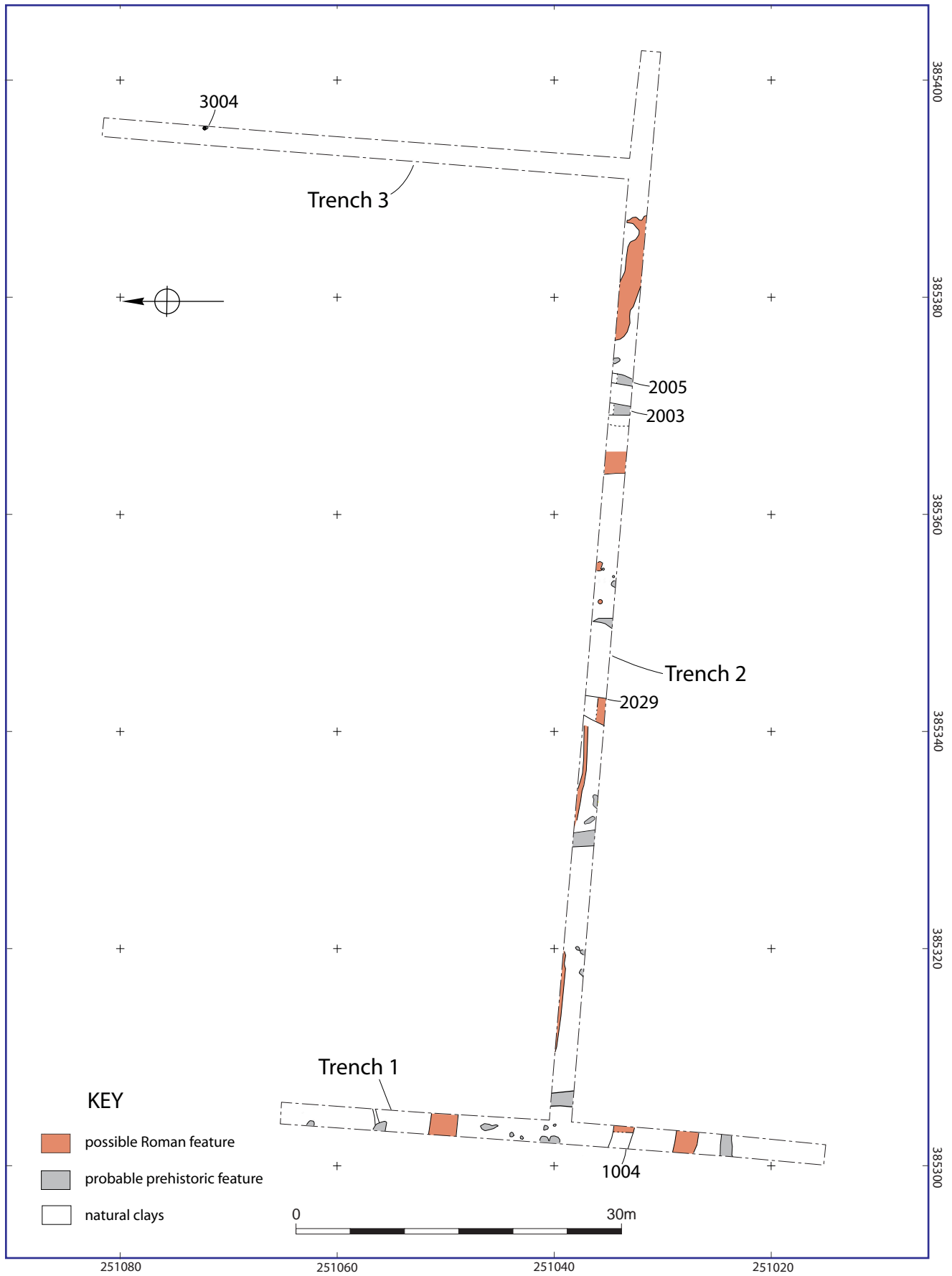
Location of the site

Figure 1



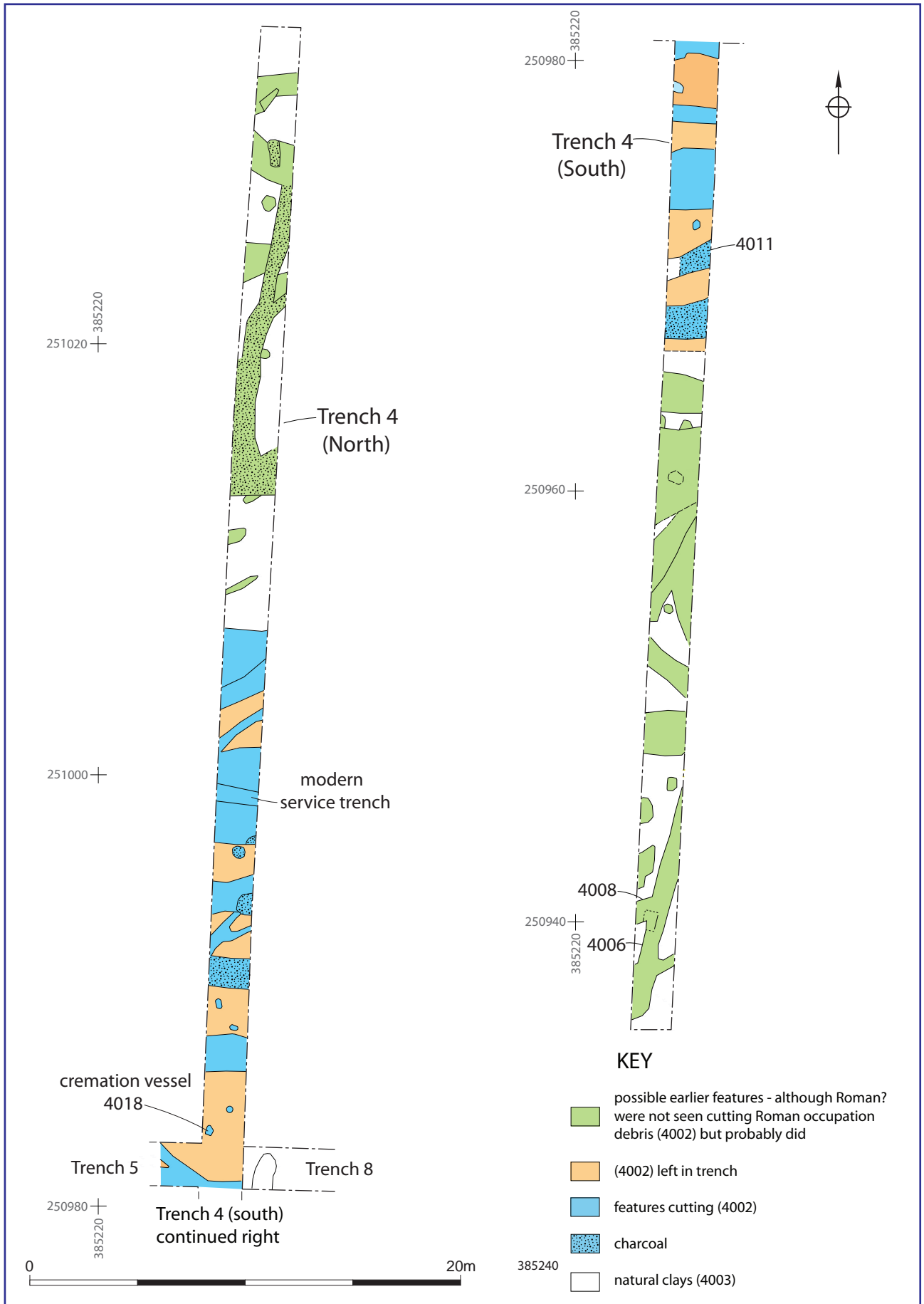
Trench location plan

Figure 2



Plan of Trenches 1 - 3

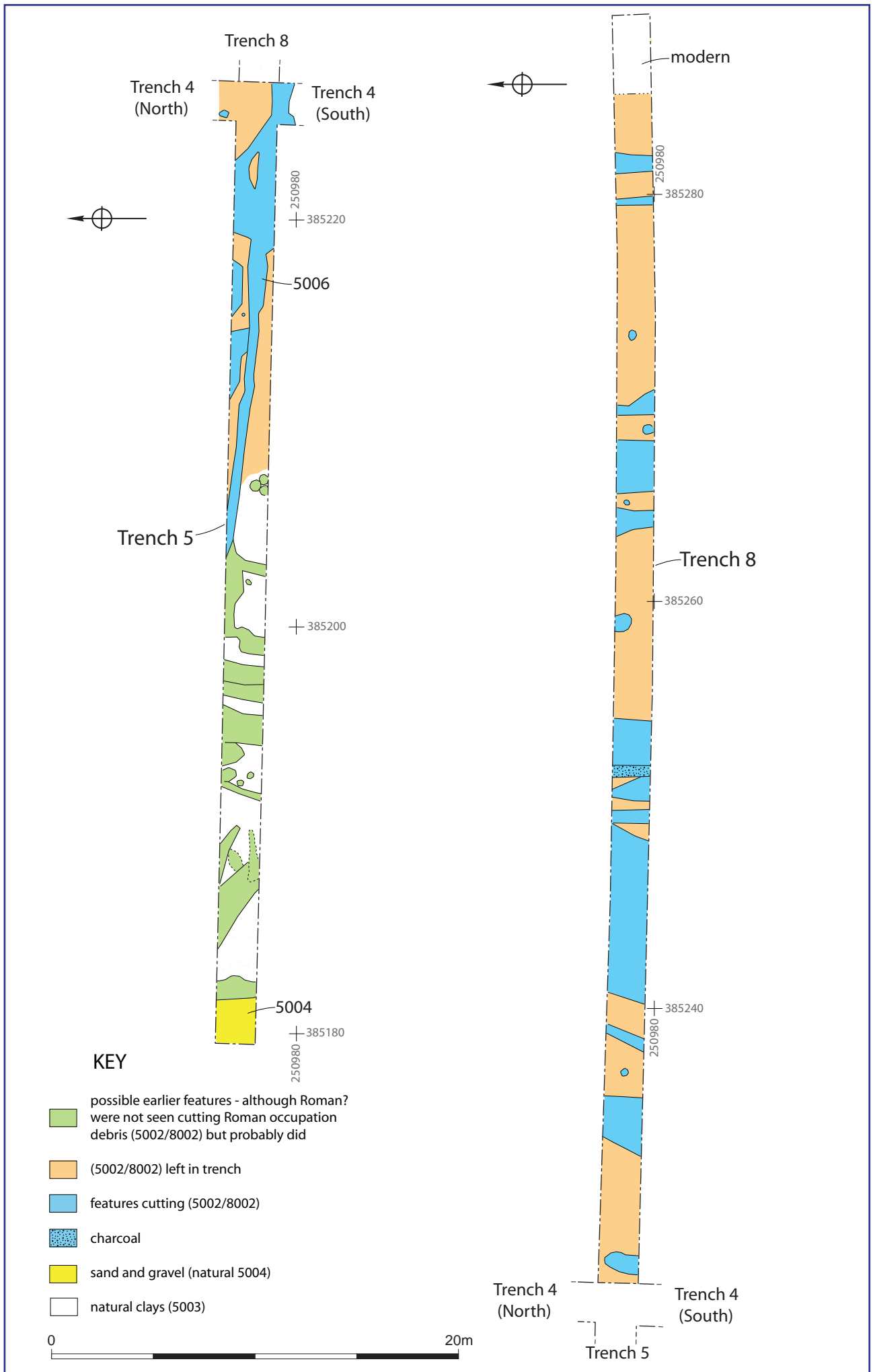
Figure 3



Plan of Trench 4

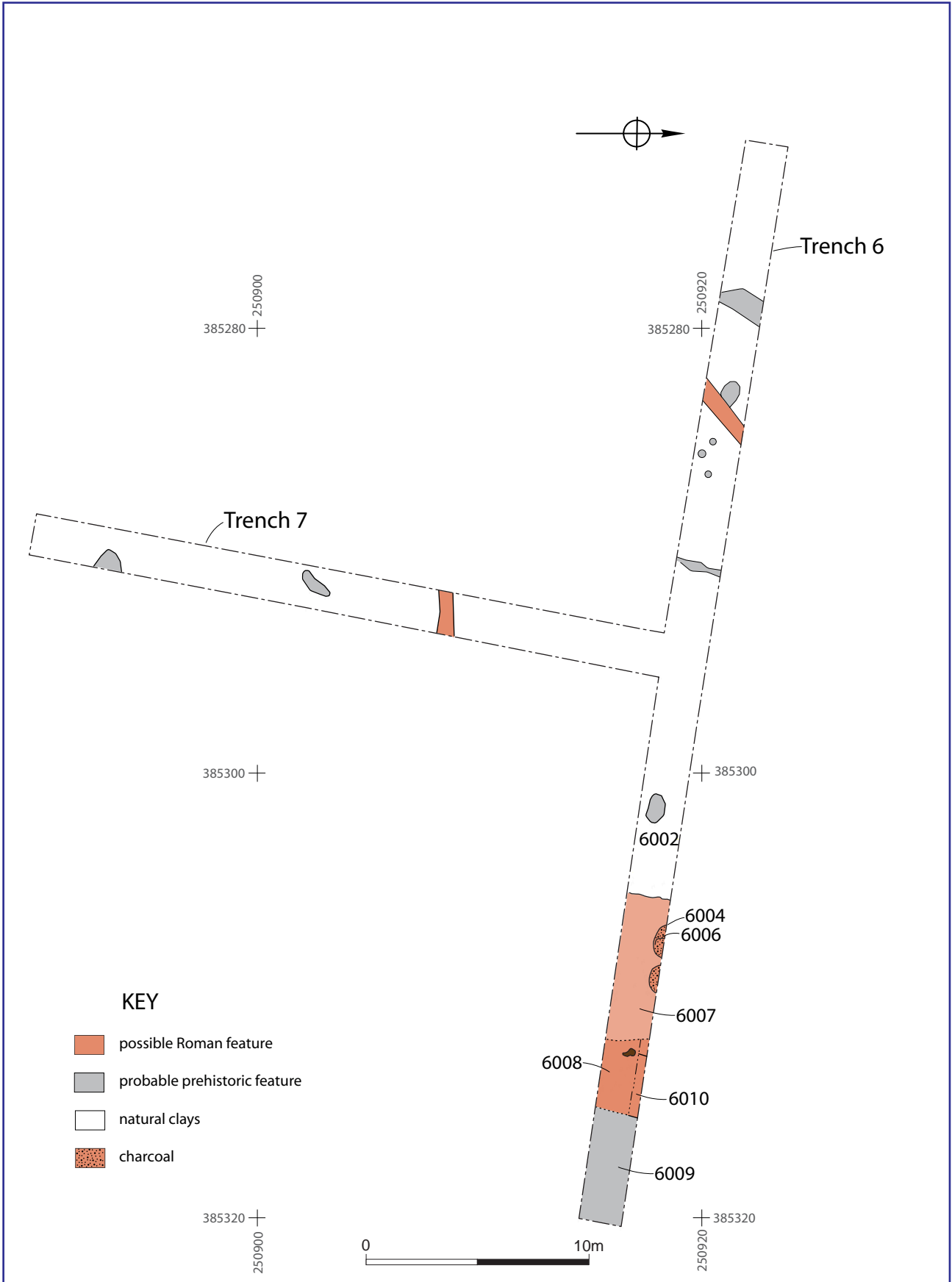
Figure 4





Plan of Trenches 5 and 8

Figure 5

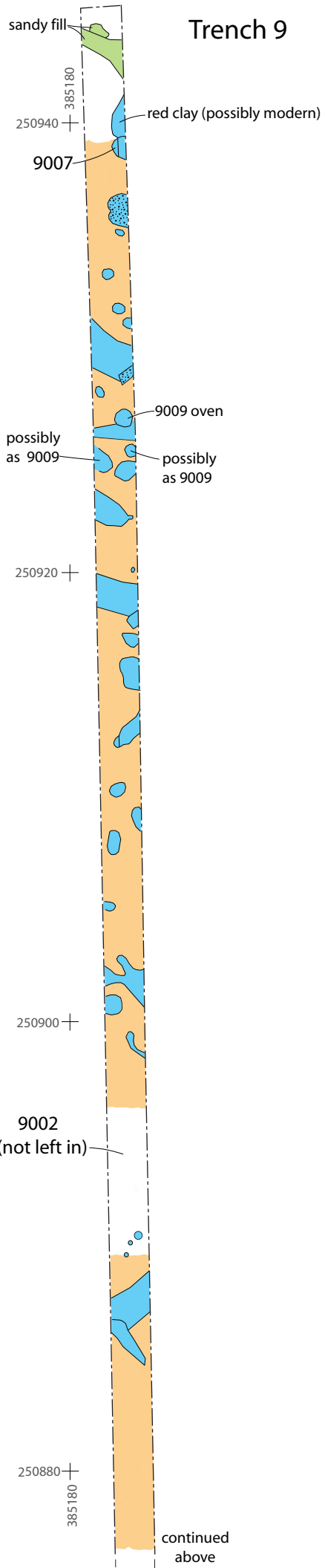


Plan of Trenches 6 and 7

Figure 6



# Trench 9



## KEY

- possible earlier features - although Roman? were not seen cutting Roman occupation debris (9002) but probably did
- (9002) left in trench
- features cutting (9002)
- charcoal
- natural clays (9003)



Plan of Trench 9

Figure 7

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## Plates



*Plate 1 Trench 4, layer (4002) with features cut through, view west*



*Plate 2 Trench 4, east to west aligned ditch (4008), cut by north to south ditch (4006), view south*

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*Plate 3 Trench 4, east to west aligned ditch (4008), cut by north to south aligned ditch (4006), view west*



*Plate 4 Trench 4, ditch (4011) with charcoal rich upper fill (4010), cut through Roman occupation horizon (4002), view west*

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*Plate 5 Trench 4, pit (4018) with pot (4017) and cremation (4016), cut into Roman occupation horizon (4002)*



*Plate 6 Trench 5, east to west aligned ditch (5005) cut through Roman occupation horizon (5002), view south*





*Plate 7 Trench 6, surface or Roman occupation horizons (6007) and (6008) with possible earlier layer (6009/6010) in the foreground, view west*



*Plate 8 Trench 6, pit or posthole (6004) with post pipe (6006), cut through Roman occupation horizon (6007), view north*

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*Plate 9 Trench 1, ditch (1004), view south-east*



*Plate 10 Trench 9, oven or kiln (9009), cut through Roman occupation horizon (9002), view east*





*Plate 11 Trench 2 shallow gully ditches (2003) (left) and (2005 (right), sealed by subsoil (2001), view north*

## Appendix 1 Trenches and primary context descriptions

### Trench 1

Maximum dimensions: Length: 51m Width: 1.8m Depth: 0.40-0.60m

Orientation: N-S

#### Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
1000	Topsoil	Dark reddish brown friable silty clay with frequent root action and occasional charcoal.	0-0.55m
1001	Earlier soil horizon	Light reddish brown friable silty clay with occasional charcoal.	0.40-0.60m
1002	Natural	Pinkish red clay	0.60m+

### Trench 2

Maximum dimensions: Length: 99m Width: 1.8m Depth: 0.48m

Orientation: E-W

#### Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
2000	Topsoil	Dark reddish brown friable silty clay with frequent root action and occasional charcoal.	0-0.23m
2001	Earlier soil horizon	Light reddish brown friable silty clay with occasional charcoal. Not seen all over the trench.	0.23-0.48m
2002	Natural	Pinkish red clay	0.48m+

### Trench 3

Maximum dimensions: Length: 49m Width: 1.8m Depth: 0.47m

Orientation: N-S

#### Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
3000	Topsoil	Dark reddish brown friable silty clay with frequent root action and occasional charcoal.	0-0.30m
3001	Earlier soil horizon	Light reddish brown friable silty clay with occasional charcoal.	0.30-0.47m
3002	Natural	Pinkish red clay	0.47m+

#### Trench 4

Maximum dimensions: Length: 100m Width: 1.8m Depth: 0.50-0.60m

Orientation: N-S

##### Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
4000	Topsoil	In centre of trench dark brown friable silty clay with occasional pebbles and charcoal. In north and south of the trench it was lighter not so deep.	0-0.40m
4001	Earlier soil horizon	Mid reddish brown silty clay with occasional charcoal, fire cracked stone and iron slag.	0.40-0.55m
4002	Roman occupation horizon	Friable dark brown black silty clay with occasional lumps and flecks of charcoal, sub-rounded pebbles, iron slag and fire cracked stone. Becomes lighter with depth.	0.40-0.55m
4003	Natural	Reddish clays	0.55m+

#### Trench 5

Maximum dimensions: Length: 45m Width: 1.8m Depth: 0.60m

Orientation: E-W

##### Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
5000	Topsoil	In east of trench dark brown friable silty clay with occasional pebbles and charcoal. In West of the trench it was lighter and not so deep.	0-0.40m
5001	Earlier soil horizon	Mid reddish brown silty clay with occasional charcoal, fire cracked stone and iron slag.	0.40-0.60m
5002	Roman occupation horizon	As (4002)	0.40-0.60m
5003	Natural	Reddish clays.	0.55m+
5004	Natural	Sands and gravels. Seen in far west of trench	0.55m+

**Trench 6**

Maximum dimensions: Length: 49m Width: 1.8m Depth: 0.50-0.60m

Orientation: E-W

## Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
6000	Topsoil	Mid reddish brown friable silty clay with occasional charcoal and pebbles	0-0.30m
6001	Earlier soil horizon	Light reddish brown silty clay with occasional charcoal.	0.20-0.45m
6002	Natural	Reddish and greyish clays	0.45m+
6007	Roman occupation horizon	As (4002) except more mixed in colour and more iron slag present.	0.20-0.30m

**Trench 7**

Maximum dimensions: Length: 29m Width: 1.8m Depth: 0.50-0.65m

Orientation: N-S

## Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
7000	Topsoil	Mid reddish brown friable silty clay with occasional charcoal and pebbles	0-0.30m
7001	Earlier soil horizon	Light reddish brown silty clay with occasional charcoal.	0.30-0.55m
7002	Natural	Reddish clays	0.55m+

**Trench 8**

Maximum dimensions: Length: 62m Width: 1.8m Depth: 0.50-0.55m

Orientation: N-S

## Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
8000	Topsoil	In west of trench dark brown friable silty clay with occasional pebbles and charcoal. In east of the trench it was lighter not so deep.	0-0.40m
8001	Earlier soil horizon	Mid reddish brown silty clay with occasional charcoal, fire cracked stone and iron slag.	0.30-0.50m
8002	Roman occupation horizon	As (4002)	0.40-0.55m
8003	Natural	Reddish clays	0.55m+

### Trench 9

Maximum dimensions: Length: 99m Width: 1.8m Depth: 0.65-1.160m

Orientation: N-S

#### Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
9000	Topsoil	Dark brown friable silty clay with occasional pebbles and charcoal.	0-0.45m
9001	Earlier soil horizon	Mid reddish brown sandy silty clay with occasional charcoal, fire cracked stone and iron slag. Only seen in south of the trench.	0.65-0.90m
9002	Roman occupation horizon	As (4002) except lighter in colour and contained less inclusions	0.45-0.65m
9003	Natural	Sands and gravels	0.65m+
9004	Redeposited soils	Disturbance and redeposited topsoil in south of trench. Overlies (9000)	0-0.45m

### Trench 10

Maximum dimensions: Length: 22m Width: 1.8m Depth: 0.90m

Orientation: N-S

#### Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
10000	Modern disturbance	Redeposited clays and building rubble. Disturbance by landowner. Deeper in south	0-0.90m
10001	Topsoil	Mid reddish brown friable silty clay with occasional charcoal and pebbles. Only seen in north of trench	0.40-0.75m
10002	Roman occupation horizon	As (4002) except lighter and less inclusions present	0.75-0.90m
10003	Natural	Reddish and greyish clays	0.90m+

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## Appendix 2 Technical information

### The archive (site code: WSM 46461)

The archive consists of:

- 46 Context records AS1
- 9 Field progress reports AS2
- 3 Photographic records AS3
- 237 Digital photographs
- 1 Drawing number catalogues AS4
- 37 Scale drawings
- 1 Recorded finds records AS13
- 7 Sample records AS17
- 1 Sample number catalogues AS18
- 7 Flot records AS21
- 10 Trench record sheets AS41
- 2 Box of finds
- 1 CD-Rom/DVDs
- 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

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**Appendix 3 SUERC Radiocarbon dating certificates**

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## Summary of data for Worcestershire HER

period	material class	material class sub-type	object specific type	count	weight (g)
Prehistoric	Stone	Flint	Flake	1	6
Roman	ceramic		Pot	372	9373
Roman	ceramic		oven plate	4	186
Roman/undated	ceramic		ceramic building material	55	5004
Roman	Glass		Vessel	1	6
Roman/undated	Metal		iron slag		12930
post-medieval	ceramic		Pot	17	330
post-medieval	ceramic		clay pipe	1	8
post-medieval	Glass		Vessel	1	4
Undated	Organic		Coal		62
Undated	Bone	animal bone	Assorted	8	113
Undated	Stone		Assorted	21	17391
Undated	Plaster			1	28
Undated	fired clay		unidentified	8	128
Undated	Metal	Iron	Assorted	2	470
Undated	Metal	copper alloy	ring fragment	1	1
Total				490	30975

Table 1: Quantification of the artefactual assemblage

Latin name	Common name	Habitats	4010	4009	4012	9006
<b>Charred</b>						
<i>Triticum spelta</i> glume base	spelt wheat	F			+	
<i>Triticum sp</i> grain	wheat	F	+		+	
Cereal sp indet grain fragment		F			+	+
<i>Corylus avellana</i> nutshell fragment	hazel	C			+	
<i>Vicia/Lathyrus</i> sp	vetch/vetchling	ABCD			+	
Charcoal fragments			++++	++++	++++	+++
<b>Other remains</b>						
Coal fragments			++	++	++	+++
Spherical hammerscale			++++	+	++++	++++
Flake hammerscale			+++		+	
Burnt bone fragments					+	

Table 2 Charred plant remains and other remains recovered from the flots assessed from WSM 46461

Habitat	Quantity
A= cultivated ground	+ = 1 - 10
B= disturbed ground	++ = 11- 50
C= woodlands, hedgerows, scrub etc	+++ = 51 -100
D = grasslands, meadows and heathland	++++ = 101+
E = aquatic/wet habitats	
F = cultivar	

Key to Table 2



Context	Animal bone	Pottery	Brick	Fe slag	Fe objects	Spherical hammerscale	Flake hammerscale	Coal	Heat-cracked stone	Comments
4010	occ – burnt	occ	occ	v abun	Occ	v abun	v abun	abun	occ	Fe objects include nail and possible brooch
4009							occ		occ	
4012	occ – burnt	occ	occ	v abun		abun	v abun	abun	occ	
9006		occ		v abun		v abun	v abun	abun	occ	

Table 3 Summary of other biological and artefactual remains recovered from the sample residues

Latin name	Common name	Habitats	4010	4009	4012	9006
<b>Charred</b>						
<i>Triticum spelta</i> glume base	spelt wheat	F			+	
<i>Triticum</i> sp grain	Wheat	F	+		+	
Cereal sp indet grain fragment		F			+	+
<i>Corylus avellana</i> nutshell fragment	Hazel	C			+	
<i>Vicia/Lathyrus</i> sp	vetch/vetchling	ABCD			+	
Charcoal fragments			++++	++++	++++	+++
<b>Other remains</b>						
Coal fragments			++	++	++	+++
Spherical hammerscale			++++	+	++++	++++
Flake hammerscale			+++		+	
Burnt bone fragments					+	

Table 4 Charred plant and other remains recovered from the flots assessed

Habitat	Quantity
A= cultivated ground	+ = 1 – 10
B= disturbed ground	++ = 11- 50
C= woodlands, hedgerows, scrub etc	+++ = 51 -100
D = grasslands, meadows and heathland	++++ = 101+
E = aquatic/wet habitats	
F = cultivar	

Key to Table 4