Archaeological investigations at Land off Claphill Lane, Rushwick, Worcestershire

Worcestershire Archaeology

for Lioncourt Homes Ltd

March 2023





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LAND OFF CLAPHILL LANE RUSHWICK WORCESTERSHIRE

Archaeological mitigation report

Worcestershire Archaeology
Worcestershire Archive & Archaeology Service
The Hive
Sawmill Walk
The Butts
Worcester
WR1 3PD

SITE INFORMATION

Site name:	Claphill Lane, Rushwick, Worcestershire
Local planning authority:	Malvern Hills District Council
Planning reference:	19/01378/OUT and APP/J1860/W/21/3267054
Central NGR:	SO 82082 53963
Commissioning client:	Lioncourt Homes Ltd
WA project number:	P6343
WA report number:	3080
HER reference:	WSM78369
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Archaeological Investigations at land off Claphill Lane, Rushwick, Worcestershire

By Jamie Wilkins

With contributions by Laura Griffin, Jo Losh and Elizabeth Pearson

Illustrations by Abbie Horton

Summary

A series of archaeological investigations were undertaken by Worcestershire Archaeology from September to October 2022 on land off Claphill Lane, Rushwick, Worcestershire (NGR SO 82082 53963). This comprised the excavation of an area measuring some 0.60ha, supplemented with an additional two evaluation trenches positioned to help inform the western limit of the excavation. The areas identified for further mitigation were informed by a previous phase of archaeological evaluation trenching. The project was commissioned by Lioncourt Homes Ltd, in advance of a proposed residential development.

The archaeological investigations have identified a variety of archaeological features which have been dated to the Romano-British, late-Saxon, medieval, post-medieval and modern periods.

There was a complete absence of prehistoric archaeology, even residual material within later features, suggesting that occupation of the site did not occur until the Romano-British period, likely to have been in the late-1st century AD. Roman features were limited to a few gullies and a possible four-post structure, though the dating remains tentative. There was a considerable amount of Roman residual material, however, recovered from both later features and the overlying soils, indicating that the site lay in close proximity to a Roman rural site.

There was a period of inactivity until the site was reoccupied in the late-Saxon period, although the presence of a residual mid-Saxon loomweight hints at an earlier presence in the vicinity. The late-Saxon archaeology was the most significant encountered on site, and comprised several ditches, possibly forming a trackway, and 16 postholes in a broadly rectangular arrangement, likely to represent a post-built structure. A sherd of 10th century pottery was recovered from one of the ditches, and charred-grain recovered from a basal fill had a radiocarbon date of 990 – 1160 cal AD.

It is likely that this collection of features represented the remains of a small farmstead, and there was some evidence to suggest it continued into the immediate post-Conquest period. At some point, likely to have been in the late-11th or early-12th century the building was burnt down, and the remains were backfilled into the nearby ditches. A new series of field boundary ditches were then excavated across the site between the 12th and 14th centuries, though the absence of any material later than the mid-14th century, combined with the recovery of a Henry 1 silver penny, suggested that this activity did not necessarily extend much past the 12th century. It is of some interest to note that the change in land-use observed on site in the 12th century may have coincided with the creation of a manorial estate at nearby Upper Wick in *c* 1158.

Later features were limited to two post-medieval field boundary ditches, and two drainage ditches of modern date. It is apparent that following the 12th century the site itself remained primarily agricultural until the 21st century.

Report

1 Introduction

1.1 Background to the project

A series of archaeological investigations were undertaken by Worcestershire Archaeology (WA) from September to October 2022 on land off Claphill Lane, Rushwick, Worcestershire (NGR SO 82082 53963; Figure 1). This comprised the excavation of an area measuring some 0.60ha, supplemented with an additional two evaluation trenches positioned to help inform the western limit of the excavation. The project was commissioned by Lioncourt Homes Ltd, in advance of a proposed residential development. A planning application has been submitted to Malvern Hills District Council and planning permission has been granted on appeal, subject to a programme of archaeological works (planning reference 19/01378/OUT and APP/J1860/W/21/3267054).

The archaeological advisor to the local planning authority considered that the proposed development had the potential to impact upon possible heritage assets. A desk-based assessment (DBA) of the site, undertaken in 2019, identified a low potential for archaeological remains and a geophysical survey of the site also produced negligible results. Archaeological evaluation of the site, however, identified several ditches thought to be associated with a small rural settlement, some of which contained pottery of Roman and medieval (late-11th to 13th century) date.

No brief was provided but an excavation and trenching plan was agreed with the archaeological advisor to Malvern Hills District Council. A written scheme of investigation (WSI) was prepared by Worcestershire Archaeology (WA 2022) and approved the archaeological advisor. The project also conforms to the industry guidelines and standards set out by the Chartered Institute for Archaeologists in *Standard and guidance: for archaeological field evaluation* (CIfA 2014a)*; Standard and guidance: for archaeological excavation* (CIfA 2014b) and the *Standards and guidelines for archaeological projects in Worcestershire* (WCC 2019).

1.2 Site location, topography and geology

The excavation site is located to the immediate north of Rushwick and *c* 3km south-west of the centre of Worcester (NGR SO 82082 53963; Figure 1). It comprises a single pasture field, located on slightly acid loamy and clayey soils with impeded drainage of moderate to high fertility (Cranfield and Agrifood Institute 2023). It is bounded to the east by the A4440 (Grove Way) and residential development to the west. The northern boundary of the field comprises a deep stream valley, along which ponds have been created either by damming the stream or through excavation. The ponds, which are not visible on any historic mapping, are believed to have been created between 1999 and 2005. Other nearby watercourses comprise the River Teme, *c* 1.25km south, and the River Severn, 2.5km to the east. The site is situated on steeply sloping ground, the highest point of which is located in the north of the field at *c* 39m *above ordnance datum* (AOD), which drops to *c* 30m AOD in the south.

The soils of the area are classified as the Wick 1 soil association (541r) consisting of well drained reddish coarse and fine loamy soils (Ragg *et al* 1984). The underlying geology predominantly comprises bedrock of Sidmouth Mudstone formation, however sand and gravel river terrace deposits of the Kidderminster Station and Holt Heath members are recorded in places (BGS 2022).

2 Archaeological and historical background

2.1 Introduction

An archaeological desk-based assessment (DBA) of the site was undertaken by Worcestershire Archaeology, on behalf of Lioncourt Homes Ltd (Mann 2019). A search, covering a radius of 500m of the site, was made from the Worcestershire Historic Environment Office (HER) and this information was allied to additional historic mapping, archives and published sources. A geophysical survey was

also undertaken to accompany the DBA (SUMO 2018). The findings presented in the DBA are summarised below.

2.2 Prehistoric

No palaeolithic remains have been recorded within the search area to date, however, the Holt Heath gravel terrace and to a lesser degree the Kidderminster Station member gravel deposits have been identified as having the potential to contain important Palaeolithic remains and palaeoenvironmental deposits (Russell and Daffern 2014).

No prehistoric sites were identified within the search area for the DBA, although the interfluvial area between the Rivers Teme and Severn was identified as a prime area for activity of this date. Within the wider landscape, a recent excavation to the west of Dines Green, and 1km north of the site, identified the probable remains of a burnt mound, which was radiocarbon dated to 2460-2150 cal BC, placing it within the late-Neolithic and early-Bronze Age transition (Wilkins 2021).

Three pits of middle-Bronze Age date were identified during archaeological works 530m north of the site (Vaughan 2019; Walsh 2020). The pits were all similar in character, and contained a large amount of charcoal and burnt stone, indicating a possible association with burnt mound activity. No artefacts were recovered, however radiocarbon dating was undertaken and produced a date of 1660-1500 cal BC.

2.3 Romano-British

No evidence, sites or finds, for Romano-British activity was identified within the search area of the DBA. Within the wider landscape, a small Roman rural settlement was identified during archaeological investigations at a site 1.25km to the north-west (Wilkins 2021). The site was characterised by a series of small enclosures, and a possible drove-way, with pottery evidence indicating the site was occupied between the 2nd and 4th centuries AD. One feature of note comprised a large spread of midden material in the centre of the site, preserved within a slight hollow. A large artefactual assemblage was recovered from the midden, including quern stone fragments, glass, pottery, a costrel lid, and a candlestick. Some of the material, such as the costrel lid and candlestick, are predominantly recovered from urban or religious contexts, and so it is speculated that refuse was brought to site from the Roman town of Worcester, likely for manuring (*ibid*).

Recent evaluation of a site 1.70km north of Rushwick, at Temple Laugherne, is thought to have identified another Roman rural settlement to the west of St John's (Wilkins and Lovett 2023). The site may be of some significance as several pottery forms recovered were of a c mid-1st century date, which is rare in Worcestershire. The only other site of similar date was located *c* 2km west of Ruswick at St John's, Worcester (Wainwright 2014).

The site at Rushwick would have been situated within the hinterland of the small Roman town of Worcester, located *c* 3km south-east of the site, and covering an area of up to 500m wide on the eastern bank of the River Severn (Dalwood *et al* 2018). It dates from the late-1st century AD and became a major centre of ironworking, as evidenced by the abundance of iron-rich slag frequently found with deposits of this date (Dalwood 2004; Jackson 2004). Recent evidence has suggested that Worcester may have also been the focus of cattle markets within the region, which, with exception of the Vale of Evesham and the River Avon, appears to have been dominated by a pastoral economy (Dalwood *et al* 2018; Bradley *et al* 2018; Gan *et al* 2018).

2.4 Medieval

The hamlet of Rushwick is not mentioned in the Domesday Book though the Manor of Wick Episcopi, located *c* 2km to the south-east at Lower Wick, is recorded. The manor was said to be granted to Bishop Milred by Offa, King of the Mercians, at some point before 775 AD, and continued to be held by the Bishops of Worcester until 1558 (VCH III, 501). Later, a manor was granted at Upper Wick, *c* 800m south-east of the site, to Osbert D'Abitot by Bishop Alfred of Worcester in *c* 1158 AD (*ibid*).

Rushwick is first recorded in 1299 (VCH III, 501) and Claphill is derived from the Middle English clapere or rabbits, suggesting that this area was part of the warren established by Alexander de Freville in 1286 (VCH III, 507). Evidence from the HER and geophysical survey indicate that ridge and furrow (WSM12136) overlaid the site, indicating that for at least some of the medieval period, the area was located in the agricultural hinterland of Rushwick to the south, and more broadly, Worcester to the east.

The nearby medieval moated site of Grove Farm is located *c* 400m north-east of the site. The current farm building (WCM25370; NHL1389873) was constructed in the mid-18th century on the site of a former medieval manor. The moat (WSM56001) is still extant on the eastern edge of the site, but elsewhere survives only as a boundary, planted with hedging. Archaeological evaluation of the site identified a dump of roof tile dating from the 16-17th century which may have been associated with a building demolished prior to the construction of the current farmhouse in the mid-18th century (Walsh 2015). Further archaeological evaluation in the landscape around the site has so far not identified any other significant archaeological remains (Reeves 2006; Hart 2012; Arnold 2022).

A second medieval moated site is located 850m to the north of the site. This comprises the scheduled monument of Earl's Court Moated site (SAM31957; WSM00471), which is understood to be considerably well preserved. It includes a complete rectangular moat with the adjoining remains of what is believed to be an earlier, round moat to the north, and a system of leats, defining a series of enclosure to the east. Excavations 250m north-west of the moated site identified several ditches, dating from the 12th-14th centuries, which were likely associated with agricultural use of landscape around the manor (Wilkins 2021).

Recent archaeological investigations at Temple Laugherne, *c* 2km north-east, recorded the remains of a medieval hamlet focussed around a post-built chapel of a 13th to 14th century date (Cornah 2021). Additional structures included at least four earth-fast built structures, evidenced via beam-slots and post-holes. An exceptional find comprised 23 sherds of a 'horse and knight' jug, the first of its kind found within Worcestershire. The jug was decorated with the depiction of an armoured knight mounted on a galloping horse, and is a piece typically recovered from urban contexts

2.5 Post-medieval and modern

The available mapping, from 1741 onwards, indicates that the land has remained under agricultural use through the post-medieval and modern periods with little more occurring than the amalgamation of small fields into larger parcels of land. The earlier maps suggest that a small water course ran east to west across the northern half of the site. On the 1840 tithe map this channel appears to separate the poorer agricultural land named Rough Ground, Lower Rough Ground and Upper Rough Ground to the north of the site from the better ground to the south, named Claphill, Upper Claphill and Lower Chapel (although the latter is more likely to be transcription error and should read Lower Claphill). The northern fields belonged to the Crown East Estate by 1922 while those to the south belonged to St John's Estate in 1919.

Claphill Lane was moved to its current location in 1865 after the then occupant of the Crown East estate objected to the road crossing the estates parkland. The former route of Claphill Lane (WSM17317) is located *c* 200m north-west of the site and located on the eastern edge of the road are the deserted settlement remains of 16th and 19th century date (WSM49681).

There are two listed buildings within the search area. The closest, Laugherne House (WCM98718, NHL1063907) is located 100m to the south-east of the site. The two-story 18th century house is Grade II listed and constructed in reddish-brown brick in Flemish bond. The second listed building is the aforementioned Grove Farm within the moated site to the east.

The Worcester to Hereford railway line (WSM31668) is located 100m south of the site and transects the modern settlement of Rushwick. Construction on the line began in 1859 and was completed by 1861.

Land immediately west of the site was evaluated in 2013, prior to the construction of the residential development now centred on Callows Orchard, off Claphill Lane (Havard 2013). The only archaeological remains identified were agricultural in character and comprised a post-medieval field boundary ditch, and a slight earthwork, caused via a build-up of subsoil and interpreted as a ploughing headland.

Further post-medieval agricultural remains were identified during evaluation on a site off Bransford Road, 300m to the south-east of the site (Havard 2017). Several furrows and a field boundary ditch were recorded, providing further evidence for the agrarian character of the landscape around Rushwick from the medieval period onwards.

2.6 Previous archaeological work on the site

Previous archaeological work on the site comprised a geophysical survey undertaken in conjunction with the DBA, and a programme of evaluation trenching in February 2022. The geophysical survey comprised detailed magnetometry and produced negligible results. Two regimes of ridge and furrow were identified, aligned north to south and east to west, and two other linear anomalies identified of possible archaeological origin (SUMO 2018).

Subsequent evaluation of the site comprised 21 trenches excavated across three fields (Mann 2022). No features or deposits were identified in the northern fields, however, a pocket of activity comprising several ditches were identified within the southernmost field. A small assemblage of pottery was recovered from the ditches, some of which was identified as of Roman origin, and some of late-11th to 14th century AD. Several of the ditch fills were rich in burnt material, including charred cereal, which following environmental analysis was identified as free-threshing wheat, making a medieval origin more likely. A large quantity of fired-clay was also present within the backfill of the ditches, possibly indicating the remains of a structure, such as an oven or building, within the near vicinity.

3 Project aims

The aims and scope of the project were to investigate, excavate, record and define the archaeological remains identified during the previous stage of evaluation of the site.

Prior to the mitigation of the site, and following the evaluation, the following aims were initially identified in Hunt, J, 2011 *The medieval period*, in S Watt (ed), *The archaeology of the west Midlands: a framework for research*. Oxbow Books:

- Can we confirm and map settlement density in the medieval period, and examine more closely the form that it took [176]?
- What information can be gathered on building types in rural settlements [177]?
- What were the origins of villages [178]?
- Can the nature and context of settlements provide further information on the fluidity of settlement and reviewing settlement 'life cycles' in the context of a wider landscape [179]?

During the start of the post-excavation analysis, the following aims relating to the late-Saxon archaeology were identified, as set out in Hooke, D, 2011 *The post-Roman and the early medieval periods in the west midlands: a potential archaeological agenda* in S, Watt (ed) *The Archaeology of the West Midlands: A framework for research*. Oxbow Books:

- Continued search for evidence of all forms of early medieval rural settlements with particular attention to sites where Roman and medieval settlements are juxtaposed. [167]
- Need to record areas of specific land use such as early field systems, etc. the difficulty of dating such features should not mean that they are ignored. [167]

4 Project methodology

4.1 Fieldwork methodology

A Written Scheme of Investigation (WSI) was prepared by Worcestershire Archaeology (WA 2022). Fieldwork was undertaken between 12 September and 27 October 2022.

Fieldwork comprised the excavation of a single area amounting to some 6,122m^2, with two additional 50m by 1.80m evaluation trenches immediately to the west. The locations of the areas and trenches is indicated in Figure 2.

The final excavation area differed slightly from what was initially outlined in the WSI. The principle excavation area was intended to cover an area of 5,481m^2, however, the presence of a tree coppice on the eastern edge of the site limited the area to 4,997m^2. Provision was made to extend the excavation area northwards to cover up to 2,250m^2, however following on site discussions with Aidan Smyth (Archaeological Advisor to Malvern Hills District Council), it was agreed that an extension of 1125m^2 would be sufficient.

The additional two evaluation trenches (numbered as Trenches 23 and 24 to continue the 2022 evaluation sequence) were positioned to interrogate possible linear features identified in Trench 17 of the original evaluation. Provision was made to extend these trenches into a second excavation area, of up to 900m^2, if required, however following discussion with the archaeological advisor this was not deemed to be necessary.

Deposits considered not to be significant were removed under constant archaeological supervision using a 360º 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 Worcestershire Archaeology practice (WA 2012) and trench and feature locations were surveyed using a GNSS device with an accuracy limit set at <0.04m. On completion of excavation, trenches were reinstated by replacing the excavated material.

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

The project archive is currently held at the offices of Worcestershire Archaeology. Subject to the agreement of the landowner it is anticipated that it will be deposited at Worcestershire County Museum.

4.2 Artefactual methodology by Laura Griffin

4.2.1 Recovery policy

Artefacts were recovered according to standard Worcestershire Archaeology practice (WA 2012).

The majority of artefacts collected in the field were recovered by hand, but a small quantity of further material was retrieved from environmental samples (see below).

4.2.2 Method of analysis

All hand-retrieved finds from both the evaluation and excavation stages of work were examined. They were identified, quantified and dated to period. A *terminus post quem* (TPQ) date was produced for each stratified context. This date was used for determining the broad date of phases defined for the site. All information was recorded on a Microsoft Access 2007 database, with tables generated using Microsoft Excel.

The pottery and ceramic building material was examined under x20 magnification and referenced as appropriate by fabric type and form according to the fabric reference series maintained by Worcestershire Archaeology (Hurst and Rees 1992; WAAS 2017). Where possible, forms were

categorised and dated using the appropriate published typology for the specific fabric type and referenced appropriately below.

Artefacts from environmental samples were examined and those worthy of comment are mentioned below but not included in the quantification tables.

Where possible, the results from analysis of this assemblage have been compared to those from other local and regional sites.

4.2.3 Discard policy

Artefacts from topsoil and subsoil and unstratified contexts will normally be noted but not retained, unless they are of intrinsic interest (e.g. worked flint or flint debitage, featured pottery sherds, and other potential 'registered artefacts'). Large assemblages of post-medieval or modern material, unless there is some special reason to retain (such as local production), may be noted and not retained, or, if appropriate, a representative sample will be retained. Discard of finds from post-medieval and earlier deposits will only be instituted with reference to museum collection policy and/or with agreement of the local museum.

4.3 Environmental methodology by Elizabeth Pearson

4.3.1 Introduction

The environmental project conforms to guidance by CIfA (2014b) on archaeological excavation and further guidance by English Heritage (2011).

4.3.2 Sampling policy

Samples were taken according to standard Worcestershire Archaeology practice (2012). A total of fifteen samples (each of up to 40 litres) were taken from the site (Table 1).

4.3.3 Processing and analysis

A total of eleven samples out of fifteen 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.

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 hammerscale.

As part of an assessment, six flots were scanned using a low power MEIJI stereo light microscope and plant remains identified using modern reference collections maintained by Worcestershire Archaeology, and a seed identification manual (Cappers *et al* 2012). Nomenclature for the plant remains follows Stace (2010).

Charred cereal grain was present in moderate quantities in three contexts, and abundant in the remaining three. Subsequently, flots from two ditch fills (1098 and 1120) were selected for full sorting and quantification to provide results which can be directly comparable to other sites. Results from scanning are also presented to provide an overview of the composition of macrofossil plant remains.

Context	Sample	Fill of	Description	Period	Phase number	Context Group	Sample volume (L)	Volume processed (L)	Residue assessed	Flot assessed

1010	1	1009	Fill of ditch	Late Saxon	2	CG02	10	10	Yes	No
1012	2		Fill of ditch	Late Saxon	2	CG02	20	10	Yes	No
1038	4	1037	Fill of ditch	medieval	3	CG03	20	10	Yes	No
1056	5	1055	Fill of ditch	Post-medieval	4	CG06	20	10	Yes	Yes
1059	6	1057	Fill of ditch	medieval	3	CG04	20	10	Yes	Yes
1074	8	1073	Fill of posthole	Late Saxon	2	CG16	10	10	Yes	Yes
1088	15	1087	Fill of posthole	Late Saxon	2	CG16	10	10	Yes	No
1098	10	1095	Fill of ditch	Late Saxon	2	CG02	20	10	Yes	Yes
1114	11	1118	Fill of ditch	medieval	3	CG09	40	10	Yes	No
1120	12	1119	Fill of ditch	medieval	3	CG11	40	10	Yes	Yes
1126	13		Fill of ditch	medieval	3	CG04	40	10	No	Yes

Table 1: List of bulk samples

4.3.4 Discard and retention policy

Remaining soil sample and residues (post scanning) will be discarded after a period of three months following submission of this report unless there is a specific request to retain them.

Retention of the following material is recommended:

- Flots
- Sorted remains from scanned residues
- Hand-collected animal bone

4.4 Animal bone methodology by Elizabeth Pearson

Animal bone was identified with the aid of modern bone reference collections housed at the Worcestershire Archaeology offices and identification guides (Schmid 1972 and Hillson 1992). It was quantified according to weight (g) and count and tabulated by context.

5 Archaeological results

5.1 Introduction

The features recorded in the excavation area and evaluation trenches are shown in Figures 2-15 and Plates 1-21. The context group list is presented below.

Context Group	Brief Description
CG01	NW-SE aligned ditch in the south of the site. Paired with ditch CG02 located 8m to the north, forming an entrance or trackway.
CG02	Ditch in the centre of site running parallel to, and likely paired with, ditch CG01, possibly forming an entrance or trackway. Appears contemporary with ditch CG05.
CG03	Curving ditch in the centre of site which may form the eastern boundary of a field system or small enclosure. It is later re-established by ditch CG04, and appears to utilise the boundary established by CG01.
CG04	A ditch which re-establishes the boundary formed by earlier ditch CG03. Continues into the north of the area and appears to terminate. It is truncated by ditch CG07.
CG05	A segmented ditch in the centre of the site, aligned north-south, and contemporary to ditch CG02.
CG06	A substantial ditch which extends into the site from the western limit of excavation. Small artefactual assemblage indicates a post-medieval date but also includes a residual copper alloy Roman sestertius.
CG07	A field boundary ditch which forms a reverse 'L' shape, and continues past both the northern and western limits of the excavation. It truncates earlier ditches CG03/04 and is recut by ditch CG08.
CG08	A small recut of ditch CG07, which spurs off to the north-west.
CG09	A north-south aligned ditch in the centre of the site which is truncated by later ditches CG07 and CG10/11. A small amount of Roman material recovered from the backfill.
CG10	A ditch which may represent an earlier boundary below CG11. Heavily truncated and only seen in two slots, but does truncate ditch 1153 which contained a silver Henry I penny.
CG11	A NE-SW aligned ditch which extends into the site from the western limit. Truncates ditches CG10 and CG09. Possibly represents a former field boundary.
CG12	A small arcing gully of unknown date which is truncated by ditch CG09. It is possibly associated with other small gullies CG13/14, and may be pre-medieval.
CG13	A small arcing gully, aligned broadly NW-SE which is likely associated with gully CG14. Unknown function or date.
CG14	A small arcing gully in the west of the site and likely associated with CG13. Truncated by four-post structure CG15, so is likely to be Roman or earlier in origin.
CG15	Four postholes, of Roman date, in a square arrangement, likely forming a four-post structure often associated with grain storage in the later-prehistoric and Roman periods.
CG16	A collection of 13 postholes, in a broadly rectangular arrangement in the south of the site. The postholes are likely to have formed a structure / building which is likely to be contemporary with ditches CG01, CG02, and CG05.
CG17	A broadly north-south aligned ditch in the west of the site which truncates ditches CG06, CG07, and CG10/11. Material recovered indicates 18th century date.
CG18	Small, straight post-medieval or modern boundary ditch in the south of the site. Truncates CG01, CG03,and CG04. Contained two copper alloy buttons.

CG19	Small ditch of probable post-medieval or modern date in the south-east corner of the site. Similar form to CG18.

Table 2: Context Groups and brief descriptions

5.2 Phasing descriptions

5.2.1 Natural deposits across the site

The natural substrate varied across the site. In the north and west of the excavation area, on the higher ground, it comprised an orangey-brown sand and gravel with frequent sub-round pebbles and cobbles mixed throughout (Figure 3; Plate 1). This deposit was also observed within evaluation trenches 23 and 24.

Towards the south of the site, the geology became a brownish-red marl clay, though frequent patches of sand and gravel remained. Towards the base of the slope, in the south of the excavation area, the natural geology was located on average 0.40m below ground surface (bgs), whereas in the north on the higher ground this was reduced to *c* 0.30m bgs.

5.2.2 Phase 1: Romano-British

A small number of features have been tentatively dated to the Romano-British period through artefactual and stratigraphic evidence. The dating evidence is limited however, and it is plausible that the Roman material recovered from these features is residual.

A group of four postholes (CG15) was located in the south-west of the site, *c* 13m from the western limit of the excavation area (Figures 5-6; Plate 2). The postholes were positioned in a square arrangement and may have been the remnants of a four-post structure, a feature often associated with grain drying and storage. The postholes varied in depth, measuring between 0.06m and 0.34m, and were backfilled with a dark silty clay. A single sherd of Roman pottery was recovered from posthole 1180. The postholes were positioned so that the square structure would have covered an area of approximately 1.50m by 1.60m.

One of the postholes (1180) in CG15 was cut into the backfill of a small arcing gully (CG14; Figure 6). The gully measured *c* 8.40m long and was backfilled with a sterile silty-sand deposit, from which no dating evidence was recovered. If the posthole structure CG15 is confirmed as Roman in date, then this gully is also likely to be of a Roman or earlier origin. A second small gully (CG13), aligned north-west to south-east, was located 0.75m to the north of CG14 (Figure 4). It measured just 0.08m deep and whilst a function is unknown, an association with gully CG14 appears likely.

5.2.3 Phase 2: late-Saxon (9th to late-11th century AD)

A small number of features, including several ditches and a rectilinear post structure represent a period of mid to late-Saxon activity on the site (Figure 7). Both artefactual and scientific dating of this period was recovered from ditch CG02, with the remaining features dated from association or stratigraphic analysis.

Central ditch Sequence

Two associated ditches (CG01 and CG02) in the south of the site are considered likely to be late-Saxon in date. The ditches were positioned parallel to one another in a north-west to south-east alignment and may have delineated a trackway (Figure 7). At their south-eastern limit the ditches were located *c* 8m apart, though this widened to 15m at the north-western limit, creating a funnel-like appearance.

The northernmost ditch (CG02) was the most substantial of the two, having a maximum depth of 0.47m (Figure 8). Notably, the ditch had been backfilled with several deposits rich in burnt material, including charcoal, charred grain, and an abundance of burnt daub (Plates 3-4). Much of the daub contained the impressions from wattle rods, and some displayed deliberately smoothed surfaces indicating it had originated from a structure. Aside from the burnt material, the only other artefacts

recovered from ditch CG02 comprised a single pot sherd of probable 10th to early-11th century origin, and a fragment of doughnut-shaped loomweight commonly used between the 6th and late-8th century AD (Plates 19-20). Radiocarbon dating of charred grain from a basal fill (1010; Plate 3) of the ditch indicated a date of 990 – 1160 cal AD (Beta-655100; 95% probability), supporting a late-Saxon date for this feature.

Ditch CG01, located to the south of CG02, was comparatively less substantial, at 0.07m-0.38m deep. Several charcoal-rich deposits were present within the backfill of the ditch, though not in the same quantities observed within ditch CG02. A small assemblage of animal bone was recovered from the ditch, identifiable as cattle and sheep / goat. No datable material was recovered, but an association with ditch CG02 is probable.

A broadly north to south aligned ditch (CG05) was located at the western limit of trackway ditch CG02 (Figure 7). Investigations suggested that the two ditches were contemporary, with no distinct relationship visible, and were likely to have been backfilled with the same charcoal-rich material. The northernmost length of CG05 was formed from a single continuous ditch but became segmented in the south splitting into an additional two sections of ditch, both measuring some 2m in length (Plate 5). The ditch was 0.05m-0.10m deep, so it remains unclear whether the segmentation was intentional, or a result of later horizontal truncation (Figure 8). A small assemblage of residual Roman pottery and an iron object interpreted as a small bucket handle, was recovered from the ditch.

Ditch CG09, in the centre of the site, has been tentatively and stratigraphically dated to the late-Saxon period (Plate 6). The ditch was aligned broadly north to south and pre-dated medieval ditches CG10/11 to the north and ditch CG07 to the south (Figure 7). Though not as clear as ditches CG01 and CG02, it is possible that this ditch is associated with CG05 to the south, and formed a second trackway across the site. It contained a small assemblage of abraded Roman pottery which is thought to be residual.

Structure CG16

Structure CG16 was located in the south of the site, in between ditches CG01 and CG02, and immediately south of ditch CG05 (Figure 9). The structure comprised thirteen postholes in a broadly rectangular arrangement which appeared to form the northern and western edges of a probable building. There was no evidence of postholes to the south or the east and it is probable that these were lost to later truncation. The postholes varied in form but were consistently shallow, measuring between 0.06m-0.15m in depth (Figure 10; Plates 7-8). All of the postholes were backfilled with a dark, charcoal-rich clay and environmental analysis indicates the presence of charred-grain, comparable to that observed in nearby late-Saxon ditch CG02 (context 1047; Table 8). No dating evidence was recovered from the postholes, but a mid to late-Saxon date for the structure is likely when considering the location amid other features of this date. Furthermore, the positioning of ditch CG05 appeared to respect the limit of the building, and it is thought that the large quantity of burnt daub contained within ditch CG02 may have originated from this structure.

The arrangement of the postholes indicates that the structure would have been at least 10m by 5m, however, it is unclear which line of postholes would have formed the western side of the building. Smaller postholes 1064 and 1131 are perhaps more likely, as their positioning creates a near right angle with the northern line of posts. If this is assumed, it would indicate that postholes 1087, 1089 and 1133 formed a second phase to the structure, possibly an extension or the addition of a ‘annex’.

5.2.4 Phase 3: medieval (late-11th to 14th century AD)

Ditch sequence

Medieval features on site were predominantly characterised by a series ditches organised into at least two phases of field systems (Figure 11). The artefactual assemblage recovered from the backfilled deposits could be broadly dated from the late-11th to 14th century AD.

Ditch CG03 was located in the centre of the site and truncated earlier Saxon ditch CG02 (Figure 11). The ditch was aligned broadly north to south, and bowed eastwards at the southern limit, creating a curvilinear plan. There was some evidence that ditch CG03 utilised the existing boundary created by ditch CG01, as it did not appear to continue south past the feature, though a relationship between the two was hard to discern given the shallow nature of both ditches at this point. The ditch had a maximum depth of 0.46m and was backfilled with a charcoal-rich deposit which, like Saxon ditch CG02, contained an abundance of burnt daub (Figure 12; Plate 9). A small assemblage of animal bone and pottery was recovered from the ditch, which provided a date of late-11th to early-12th century AD.

The boundary created by ditch CG03 was re-established by a second ditch (CG04) which for the most part, was re-cut into the top of CG03 (Figure 12; Plate 11). In the southern extent of the boundary however, the two ditches separated with CG04 shifting the boundary *c* 1m west. Ditch CG04 had a maximum depth of 0.36m and was backfilled with similar material to CG03, a charcoal-rich clay deposit which contained an assemblage of burnt daub, animal bone, and pottery. The pottery assemblage contained several residual Roman sherds, and some medieval sherds which could be dated from the late-11th to mid-14th century AD.

An ‘L’ shaped ditch (CG07) was present in the north of the site, and extended past both the northern and western limits of the excavation area (Figure 11). The ditch truncated earlier ditches CG03, CG04 and CG09, indicating a change in land-use or a new field system (Plate 11). Ditch CG07 was shallow, with a maximum depth of just 0.26m, and was noticeably more sterile than other features on site (see CG02, CG03, CG04, CG05 etc). A small assemblage of residual Roman pottery, and medieval cooking pot, dating from the late-11th to mid-14th century AD, was recovered from the ditch. A small re-cut (CG08) was located on the east to west aligned section of CG07 (Figures 11-12; Plate 12). Ditch CG08 was visible for a length of *c* 12m, and was positioned on a north-west to south-east alignment. It also contained a pottery assemblage dating from the late-11th to mid-14th century AD.

A north-east to south-west aligned ditch (CG10) was located *c* 10m north of CG08 (Figure 11). The ditch was visible for an overall length of 32m and continued beyond the western edge of the excavation. It truncated earlier ditch CG09 to the east and was truncated by post-medieval ditch CG17. The ditch contained a small assemblage of pottery dating from the late-11th to mid-14th century AD. Two ditches (1151 and 1153) identified in the westernmost slot of ditch CG10 may hint at an earlier phase to the boundary (Figure 12; Plate 13). Both ditches were truncated by CG10, but were not observed in other slots so could perhaps be the remnants of routine maintenance of the boundary. A coin (SF1), recovered from ditch 1153, is a find of some significance. This was a Henry 1 penny made from a lead and silver alloy, from *c* 1125-1135 AD (Plate 21). Although the coin would have remained in circulation for some time, the 12th century dating is consistent with the pottery assemblage recovered from Phase 3 features.

A later recut (CG11) of ditch CG10 was present along the entire length of the feature (Figure 11). It had a maximum depth of 0.33m and was notable for the charcoal-rich backfilled deposit in the eastern terminus (Figure 12; Plate 14). This deposit contained frequent fragments of fired-clay reminiscent of the burnt daub identified in ditches CG02 and CG03 to the south. Analysis of the environmental samples also identified the presence of charred-grain, though not in the same quantity observed in the late-Saxon features (Section 7 below). A small assemblage of residual Roman pottery and a red sandstone roof tile was also recovered from the ditch.

Other features

Three postholes in the centre of the site are likely to be medieval in origin (Figure 11). Posthole 1164 was located on the southern edge of, and was contemporary to, ditch CG07 (Plate 12). It was very shallow, at just 0.05m and is likely to have been associated with boundary ditch.

Posthole 1102 was located 2.80m south of ditch CG10 and *c* 3m west of ditch CG09. It had a diameter of 0.27m and a depth of 0.12m. It was backfilled with a black, charcoal-stained clay, though

little in the way of charcoal fragments were present. The function of the post is unknown, but it is likely to have been associated with a second posthole (1100) of similar form, *c* 12m east.

Two shallow furrows identified within Trench 24 are likely to be of medieval to post-medieval origin (Figure 15). The furrows were up to 0.20m deep and backfilled with a sterile, brown silty-sand deposit. The furrows appeared to be continuations of those recorded within Trench 17 in the evaluation.

5.2.5 Phase 4: Post-medieval

Ditch CG17 was located in the west of the site. It was aligned broadly north to south and continued past both the northern and southern limits of the excavation area (Figure 13). The ditch had a maximum depth of 0.46m and was backfilled with a brown silty-sand, from which an assemblage of 18th-19th century pottery, brick and clap pipe was recovered (Figure 14; Plate 15). Ditch CG18 was observed to truncate earlier ditches CG06, CG07, and CG10/11, and this allied with the artefactual assemblage indicates a post-medieval or later date.

A substantial ditch (CG06) in the south-west of the site may also be post-medieval in origin (Figure 13). The ditch extended into the site from the western limit and had a visible length of 21m. The ditch was the largest present on site, measuring some 2m wide and 0.65m deep (Figure 14; Plate 16). It was predominantly backfilled with a sterile mix of redeposited upcast material, comprising a compact silty clay. Little cultural material was recovered from the ditch, but a fragment of ceramic roof tile is of 19th century date. Other finds of interest comprised residual Roman material, including two abraded pottery sherds and a copper alloy Roman sestertius coin from an upper fill.

5.2.6 Phase 5: Modern

Modern features across the site comprised two ditches (CG18/19), three geo-tech pits and several ceramic land-drains (Figure 4). A modern truncation was also present in the area where ditches CG01 and CG04 joined, and was filled with a topsoil-like deposit which contained glass, china and some plastic refuse.

Ditch CG18 was located in the south of the site and was aligned broadly east to west. It extended c 70m across the site and truncated Saxon and medieval ditches CG01, CG03, and CG04. The ditch was shallow at just 0.08m and was backfilled with a very compact silty sand. The only artefacts recovered from the ditch comprised two copper alloy buttons which could be dated between 1850-1950.

Ditch CG19 was located 10m south of CG18, and was of similar character, being shallow and filled with a compact brown silty sand. Both ditches were positioned in a straight line, but CG19 followed a slightly different north-east to south-west alignment. No dating material was recovered from CG18 but an association with ditch CG19 is probable.

A small, ovoid pit (2303) was located in the centre of Trench 23, and was cut into the top of ditch 2305 (Figure 15). The pit was 0.80m by 0.50m and was 0.11m deep. A small assemblage of pottery was recovered from the backfill, including one Roman sherd and two sherds of modern blue and white china.

The entirety of the site was overlain by a grey, silty sand topsoil 0.20-0.30m deep. This in turn sealed a compacted, orangey-brown subsoil, which in the south of the site was up to 0.20m deep, but in the north was little more than an interface between the topsoil and the natural substrate.

5.2.7 Undated

Where possible, features have been dated via combined artefactual, stratigraphic and morphological analysis. A small number of features, however, remain undated.

A small, arcing gully (CG12) was present in the centre of the site, truncated by Phase 2 ditch CG09 (Figure 4). The gully was positioned on a north-west to south-east alignment and was *c* 5m in length

and just 0.06m in depth. No dating material was recovered from the gully, though it is likely to be pre-medieval in origin, and appears similar in form to probable Roman gullies CG13 and CG14.

Three ditches located within Trench 23 remain undated (Figure 15; Plate 17). Ditch 2310 was located in the south of the trench and was aligned broadly north-east to south-west. It was backfilled with a sterile silty sand, from which no dating material was recovered. Though on a slightly different alignment, it remains possible that ditch 2310 comprises a western continuation of ditch CG07 within the main excavation area.

Ditch 2305 was located in the centre of Trench 23. It was aligned north-west to south-east and was truncated by modern pit 2303. The ditch was 0.38m deep and was backfilled with a sterile, silty sand. Ditch 2308 was located *c* 4m north of 2305, and was positioned on a similar alignment.

A small, sterile ditch (2404) was located at the eastern end of Trench 24, and is likely to be a continuation of either ditch 2305 or 2308 (Figure 15; Plate 18). No finds were recovered from any of the ditches in Trenches 23 and 24, and this sterile nature indicates a probable association with the medieval and post-medieval agricultural use of the site.

6 Artefactual evidence by Laura Griffin, ACIfA

6.1 Introduction

The artefact report conforms to standards and guidance issued by the Chartered Institute for Archaeologists (CIfA 2014c), as well as further guidance on pottery analysis, archive creation and museum deposition created by various pottery study groups (PCRG/SGRP/MPRG 2016), the Archaeological Archives Forum (AAF 2011), and the Society of Museum Archaeologists (SMA 1993). This report covers artefacts of Roman date onwards.

6.2 Aims

This analysis aimed to identify, sort, spot date, and quantify all artefacts and describe the range of artefacts present. The information has been used to provide a full analysis of the significance of the artefacts.

6.3 Results

The results below provide a summary of the finds and of their associated location or contexts by site phase. Where possible, dates have been allocated, and the importance of individual finds commented upon as necessary.

The assemblage recovered from the site totalled 306 finds weighing 5316g (see Tables 3 and 5). The majority of the assemblage was of late Saxon/early medieval and medieval date.

period	material class	material subtype	object specific type	count	weight (g)
Late-Iron Age/early-Roman	ceramic		pot	1	9
Roman	ceramic		unidentified	1	12
Roman	ceramic		pot	40	205
Roman	metal	copper alloy	coin	1	14
Mid-Saxon	ceramic	fired clay	loomweight	1	101
late-Saxon	ceramic	fired clay	daub	176	3603
Late-Saxon/early-medieval	ceramic		pot	1	7

medieval	ceramic		pot	48	302
medieval	metal	lead alloy	coin	1	1
post-medieval	ceramic		clay pipe	3	10
post-medieval	ceramic		pot	9	384
post-medieval	ceramic		roof tile	4	188
late post-medieval/modern	ceramic		pot	2	6
late post-medieval/modern	glass		vessel	1	3
modern	metal	copper alloy	button	4	3
modern	ceramic		kiln furniture	1	7
modern	ceramic		pot	5	9
modern	ceramic		roof tile(flat)	1	34
modern	metal	copper alloy	coin	1	5
?post-medieval/modern	metal	iron	staple	1	11
undated	metal	iron	object	1	13
undated	metal	iron	fitting	1	140
undated	metal	iron	object	1	21
undated	stone	red sandstone	?tile	1	228
				306	5316

Table 3: Quantification of site assemblage

6.3.1 Summary of artefacts by period

Roman

Although a relatively substantial Roman assemblage was retrieved from the site, all but a single sherd was residual, as reflected in the highly abraded nature of both the pottery and the copper alloy coin.

Pottery

A total of 40 sherds of Roman date were retrieved. All were highly abraded, the majority having lost their original surface, as reflected in a low average sherd weight of just 5.2g. This would suggest that most, if not all sherds are likely to have been redeposited, possibly sitting exposed on the surface for some considerable time prior to their eventual incorporation into features. The only possible exception was a small sherd (fabric 12.2) from the fill of a posthole making up the four-post structure (CG15, context 1183), which came from the neck of a jar and could be dated mid 1st-2nd century. However, it should be noted that as with the rest of the Roman assemblage, this sherd was highly abraded, suggesting that deposition took place some time later than initial discard.

The range of fabrics was narrow (see Table B), with all identifiable sherds being of local production (fabrics 12, 12.1, 12.2 and 3). The presence of handmade Malvernian ware and sherds of organically tempered Severn Valley ware indicated activity from the earliest part of the Roman period. In contrast, the only diagnostic sherd in the group came from a wide-mouth jar in oxidised Severn Valley ware

(fabric 12; context 1000) which could be dated late 3rd – 4th century. Therefore, although nearly all of the Roman pottery was residual, it did indicate activity throughout the period on, or in the near vicinity of the site.

The narrow range of fabrics and form types is typical of a lower order rural assemblage, dominated by jars of local production (Evans 1993).

Copper Alloy

The only other material of Roman date consisted of a copper alloy coin (CG06). As in the case of the pottery, this was in poor condition with highly abraded edges, no reverse detail surviving and just the faint outline of the head on the obverse. Therefore, it could not be identified to a specific ruler or date.

Mid to late-Saxon

Material of mid to late-Saxon date totalled 178 finds, weighing 3,711g. All was stratified, coming from ditch fills (CG02, 03, 04 and 11). The group was dominated by building material in the form of burnt daub, which formed 99% of the assemblage for this period.

Pottery

A single sherd of Cotswolds unglazed ware (fabric 57), most likely from a jar/cooking pot was the only pottery of this period retrieved from the site (CG02, context 1036; Plate 19). Production of these vessels is thought to have commenced in the late 10th/early 11th century and therefore the occurrence of sherds of this fabric type are often considered an indicator of pre-Conquest activity.

Loomweight

A fragment of a fired clay loomweight was recovered from the same ditch as the Cotswolds unglazed ware sherd (CG02, context 1015; Plate 20). The object had oxidised surfaces and a reduced core, and the fabric was micaceous with frequent poorly sorted, sub-rounded quartz grains and common soft, red inclusions. it is considered likely that the clay was locally sourced, as supported by it being the same as that used for the burnt daub, a significant amount of which came from the same context group.

Although highly abraded, enough of the loomweight survived to give a complete section. The object was of typical Anglo-Saxon form, being ‘doughnut-shaped’. It had an overall diameter of 120mm, whilst the central hole was comparatively large, measuring 40mm in diameter. According to the classification based on weights from Flixborough (Walton Rogers 2007), it is an example of the ‘Intermediate’ form, which is thought to have taken over from the earlier Annular form in the 6th century, becoming the most commonly used type by the end of the 7th century, eventually being superseded by the ‘bun’ form by the end of the end of the 8th century (Walton Rogers 2007, 30; Petty 2014, 44).

Burnt daub

A substantial quantity of burnt daub totalling 176 pieces, was also considered to be of at least mid Saxon date due to the dating of associated finds and stratigraphy. All was retrieved from ditch fills (CG02, 03, 04 and 11), and appeared to have originated from a structure that had burnt down, thereby firing the clay walls. The clay is likely to be from a local source and is thought to have come from the wattle panels of a timber-framed building, with many pieces having impressions of the wattle rods against which it was packed. Some pieces also had identifiable surfaces which had been deliberately smoothed.

The largest single group of this material (106 pieces) came from the same ditch as the loomweight and Cotswolds unglazed ware sherd, therefore suggesting the building from which it came to pre-date the late 8th century. Further fragments were retrieved from environmental samples but not quantified or examined in any detail.

Medieval

Material of medieval date consisted of 48 sherds of pottery and a coin.

Pottery

A total of 48 sherds weighing 302g were identified as being of medieval date, all of locally produced Worcester-type ware (fabric 55), a type discussed at length by Bryant in the report for Deansway, Worcester (2004, 281). Although at 6.3g, the average sherd weight wasn't as low as observed in the Roman assemblage, it was still low and the level of preservation was variable across the assemblage, with some sherds showing higher levels of fragmentation and abrasion than others. It is possible that this variability is the result of post-depositional disturbance. However, with very little evidence of residuality amongst the medieval assemblage, it is more likely that the ground conditions have affected preservation, causing softening of sherds and surface degradation.

The group included three diagnostic sherds, all from forms commonly identified as cooking pots. It is likely that the undiagnostic sherds were also from cooking pots, with a number having soot deposits or appearing blackened from use. The earliest diagnostic sherd was from a square-rimmed form (Deansway form 55/1) of the same tradition as the Cotswolds unglazed ware cooking pots, but of slightly later date with production from the late 11th until the later 12th century (Plate 19).

The remaining two rim sherds were from thickened, everted rim cooking pot forms (Deansway form 55/3). Typologically, this is the latest cooking pot form of Worcester production, with examples from Deansway in Worcester (Bryant 2004, 290) indicating production from the start of the 12th century until the mid-14th century. However, in the case of this assemblage, the lack of any other medieval material of later date means that none of these sherds necessarily have to be later than 12th century.

The lack of any other form of fabric types within the medieval assemblage is of particular note. A dominance of local fabric types and cooking pot forms is usually thought to be associated with lower order rural settlements. However, in the absence of any structural evidence it is possible that these vessels were used to prepare food by agricultural workers.

Lead alloy coin

A lead/silver alloy hammered coin identified as a Henry 1 penny was retrieved from a ditch recut (contexts 1153/1154). The coin appeared to have been clipped and although the obverse was largely illegible, the reverse identified it to be of 'quadrilateral on cross fleury type', which dated it *c* 1125-1135 (Plate 21). Although letters can be observed, none are identifiable and therefore it is not possible to identify which mint the coin came from.

Post-medieval

The post-medieval assemblage totalled 16 artefacts ranging from late 16th-18th century in date.

Pottery

The post-medieval pottery assemblage consisted of nine sherds of dark brown/black glazed red sandy ware of later 17th-18th century date. Diagnostic sherds included two rims from bowl/pancheon forms (context 1000 and CG17) and a fine body sherd from a cup form with glaze to both surfaces (context 1043).

Ceramic building material

Four fragments of flat roof tile were identified as post-medieval (CG17 and contexts 1101 and 1043). One was diagnostic having a single nib (context 1101) and one was identified as being of tile fabric 5 (CG17, context 1188). This fabric type was first identified at Church Lane, Hallow, where it was thought to date between the later 16th and 18th centuries (Miller *et al* 2004, 16). The assemblage from Newport Street went some way to confirming this date range (Griffin 2015, 139), as do the fragments from Lowesmoor, which are all in contexts of late post-medieval date (Bradley and Griffin forthcoming). The fabric is distinctive, containing large inclusions of rounded slag and grog. It is thought that the rounded appearance of the slag suggests it was metalworking waste that had been incorporated into the clay used for the tiles, rather than having been deliberately added as temper. At Hallow, a small number of bricks also contained inclusions of the same type and it is likely that these were produced alongside the tiles.

Clay pipe
Three stem fragments were retrieved (CG17 and context 1043). None could be dated any more tightly than to the general period.

Modern

A total of 15 finds could be dated between the mid-18th and 20th centuries.

Pottery
Seven sherds of modern pottery were identified, all dated late 18th-20th century. They included five of modern china (fabric 85; contexts 1043 and 2304) and two fragments of unglazed flowerpot (fabric 101; context 1000).

A porcelain kiln separating ring was also retrieved from the topsoil (context 1000).

Copper alloy
There were three examples (one complete and two fragmentary) of machine stamped discoid buttons (CG18 and context 1800). All were of the same form with a central round panel containing four attachment holes and could be dated 1850-1950.

A George VI halfpenny dated 1945 was retrieved from topsoil (context 1800).

Other finds
Other finds included a single fragment of high-fired flat roof tile (CG06) and the rim of a pale green glass bottle (context 1043).

Undated

A small number of finds could not be dated either typologically or by association with other datable finds. These consisted of four iron objects and a piece of red sandstone.

Iron
The first of the iron objects was a narrow rod with circular section which has been bent into a u-shape with hooked loops at either end. It was reminiscent of a very small bucket handle (CG05). The second object was tentatively identified as a u-shaped staple, likely to be of post-medieval or modern date, but it was not possible to confirm this (context 1044). Another object of at least post-medieval date was a flat strip which had been bent at one end to form a loop or cylindrical hole at one end (CG17).

In addition, there was a highly corroded 'blob' of iron with no discernible form (context 2304).

Stone
A piece of red sandstone, thought to be a piece of tile measuring 2cm thick was retrieved from a ditch fill in context group 11.

fabric code	fabric name	count	weight (g)
3	Malvernian ware	1	9
12	Severn Valley ware	28	141
12.1	Reduced Severn Valley ware	1	4
12.2	Oxidised organically tempered Severn Valley ware	5	43
55	Worcester-type sandy unglazed ware	48	302
57	Cotswolds unglazed ware	1	7
78	Post-medieval red ware	9	384
98	Miscellaneous Roman wares	6	17

101	Miscellaneous modern wares	2	6

Table 4: Quantification of the pottery by fabric type

6.4 Discussion

Although small and in generally poor condition, the presence of a mid to late-Saxon loomweight and pre-Conquest pottery in this assemblage elevates it to being one of regional significance. Sites of middle Saxon date are rarely identified archaeologically in Worcestershire because, with the exception of Droitwich (Hurst 1997), there is a complete lack of pottery from this period (D Hurst pers comm). Therefore, activity of this date is only recognisable if there are obvious structural remains or other finds which are typologically specific to this period, as in the case of the loomweight from this site.

The presence of large amounts of burnt daub from the same ditch as the loomweight and the Cotswolds unglazed ware sherd is also interesting. In the absence of any earlier or later stratified material, it seems reasonable to assume that this material is also of mid to late-Saxon date, in which case it would appear that there was a building or structure on or in close vicinity to the site, which burnt down at some point during the late-Saxon or early-medieval period and which was subsequently cleared and disposed of in ditch CG02.

Activity on the site as a whole appears to have started in the early Roman period, although it is not clear what form this took as there are no obvious typically Roman structural remains. One Severn Valley ware sherd was retrieved from one of the fills of a four-post structure, which may indicate it to be of Roman date. However, like the rest of the Roman assemblage, this sherd was highly abraded, suggesting deposition some time later than initial discard.

The datable medieval pottery and the Henry 1 coin suggest an end date of 12th century for the activity. All post-medieval and later material is considered likely to be a result of manuring.

context group	context	material class	material subtype	object specific type	count	weight (g)	start date	end date	finds TPQ
	1000	ceramic		kiln furniture	1	7	M18C	20C	20C
		ceramic		pot	2	25	L3C	4C	
		ceramic		pot	6	350	L17C	18C	
		ceramic		pot	2	6	L18C	20C	
	1001	ceramic		pot	1	7	M1C	4C	L11-M14C
		ceramic		pot	4	23	L11C	M14C	
	1043	ceramic		clay pipe	1	4			L18-20C
		ceramic		pot	1	2	L17C	18C	
		ceramic		pot	4	7	L18C	20C	
		ceramic		roof tile	1	8			
		glass		vessel	1	3			
	1044	ceramic		pot	3	14	M1C	4C	?post-medieval/

		metal	iron	staple	1	11			modern
	1101	ceramic		roof tile	1	14			post-medieval
		ceramic		roof tile	1	125	1600	1800	
	1154	ceramic		pot	1	8	M1C	2C	12C (-M14C)
		ceramic		pot	4	17	12C	M14C	
		metal	lead alloy	coin	1		c.1125	c.1135	
	1800	metal	copper alloy	button	1	1	1850	1950	M20C
		metal	copper alloy	coin	1	5	1945	1945	
	1804	ceramic		pot	1	15	L11C	M14C	L11-M14C
	2006	ceramic		?tile/plate	1	12	M1C	4C	Roman
		ceramic		pot	1	8	M1C	4C	
		ceramic		pot	1	6	M1C	2C	
		ceramic	fired clay	daub	18	114			mid/late Saxon
	2304	ceramic		pot	1	1	M1C	4C	L18-20C
		ceramic		pot	1	2	L18C	20C	
		metal	iron	object	1	21			
CG02	1012	ceramic		pot	5	14			mid/late Saxon
		ceramic	fired clay	daub	101	3097			
	1015	ceramic		pot	1	12	M1C	4C	mid Saxon
		ceramic		pot	1	6	M1C	2C	
		ceramic	fired clay	loomweight	1	101	6C	L8C	
	1036	ceramic		pot	1	7	E11C	12C	E11-12C
		ceramic	fired clay	daub	17	120			
	1098	ceramic	fired clay	?daub	1	18			mid/late Saxon
CG03	1038	ceramic	fired clay	daub	5	31			mid/late Saxon
	1050	ceramic		pot	1	55	L11C	E12C	L11-E12C
CG04	1033	ceramic		pot	2	10	M1C	4C	mid/late Saxon
		ceramic	fired clay	daub	1	7			

	1111	ceramic		pot	2	9	M1C	2C	M1-2C
	1126	ceramic		pot	29	128	L11C	M14C	L11-M14C
CG05	1054	ceramic		pot	1	9	LIA	2C	?Roman
	1072	metal	iron	object	1	13			undated
CG06	1041	ceramic		pot	1	8	M1C	4C	19-20C
		ceramic		roof tile(flat)	1	34	19C	20C	
		metal	copper alloy	coin	1	14		3C	
	1195	ceramic		pot	1	3	M1C	2C	M1-2C
CG07	1079	ceramic		pot	1	7	M1C	4C	Roman
	1163	ceramic		pot	1	2	M1C	4C	L11-M14C
		ceramic		pot	6	19	L11C	M14C	
		ceramic		pot	1	3	AD240	AD400	
	1172	ceramic		pot	4	6	M1C	4C	Roman
CG08	1169	ceramic		pot	1	24	12C	M14C	12-M14C
CG09	1114	ceramic		pot	4	9	M1C	4C	Roman
		ceramic		pot	1	4	M1C	4C	
CG10	1156	ceramic		pot	2	21	L11C	M14C	L11-M14C
CG11	1120	ceramic	fired clay	daub	33	216			mid/late Saxon
	1144 4	ceramic		pot	3	19	M1C	2C	M1-2C
		stone	red sandstone	?tile	1	228			
CG15	1183	ceramic		pot	1	20	M1C	2C	M1-2C
CG17	1174	ceramic		clay pipe	1	3			post-medieval
	1175	ceramic		clay pipe	1	3			post-med/modern
		metal	iron	fitting	1	140			
	1188	ceramic		pot	2	32	L17C	18C	L17-18C
		ceramic		roof tile	1	41	L16C	18C	
CG18	1031	ceramic		pot	1	4	M1C	2C	M1-2C

	1070	metal	copper alloy	button	3	2			modern

Table 5: Summary of context dating based on artefacts

6.5 Recommendations

6.5.1 Retention/discard

Aside from the mid/late Saxon and early medieval material, this is a very standard assemblage made up primarily of locally produced pottery in small and abraded sherds. All material has been fully analysed and recorded and therefore, it is recommended that only the loomweight, burnt daub and the unglazed Cotswolds ware and the club-rimmed unglazed Worcester-type sandy ware sherds are retained.

7 Environmental evidence

7.1 Charred plant macrofossils and charcoal by Elizabeth Pearson, ACIfA

The results are summarised in Tables 6 to 8.

Charred cereal crop remains were abundant in fills of late-Saxon to post-medieval date, for which quantifications are presented in Table 7.

7.1.1 Phase 2: late-Saxon (9th to late-11th century)

Charred cereal remains from fill 1098 of ditch 1095 (CG02) were dominated by grain, predominantly free-threshing wheat (*Triticum* sp free-threshing). A small proportion of the free-threshing wheat could be categorised as compact or club wheat (*Triticum aestivo-compactum*), although the size and shape difference between this and the other free-threshing grains was expressed more as a range than a distinct divergence.

Rye (*Secale cereale*), barley (*Hordeum vulgare*) and wild or cultivated oats *(Avena* sp) were moderately abundant. Vetch or pea species (*Vicia*/*Lathyrus* sp) were similarly moderately abundant, as is commonly the case with charred cereal crop assemblages of this date. Occasional small-seeded weeds (likely to have been crop contaminants) were also recorded. These included possible cornflower (cf *Centaurea cyanus*), nipplewort (*Lapsana communis*), stinking chamomile (*Anthemis cotula*), corn marigold (*Glebionis segetum*), scentless mayweed (*Tripleurospermum* cf *inodorum*) and spike-rush (*Eleocharis* sp).

The assemblage is likely to represent cleaned grain, with a low level of contaminants, including vetch/pea and occasional small-seeded weed seeds. The vetch/pea is of similar size to the grains and would have probably been hand-sorted from the grains after sieving. The small-seeds weeds include those which are typical of cornfields. Of note is the presence of a fragment which is likely to be cornflower, which became a prevalent weed from the 12th century onwards (Greig 1989).

Uncharred remains, consisting of mainly root fragments, with occasional seeds, are assumed to be modern and intrusive as they are unlikely to have survived in the soils on site for long without charring or waterlogging.

7.1.2 Phase 3: medieval (late-11th to mid-14th century)

The assemblage of charred cereal crop remains in fill 1120 of ditch 1119 (CG11) was similar in composition to the remains from the late-Saxon ditch fill (1098; Section 7.1.1 above), although slightly less abundant.

Context	Sample	Charcoal	Charred plant	Unch*	Artefacts
1056	5	occ	abt	abt	
1059	6	occ	mod	abt	occ fired clay
1074	8	occ	mod	abt	occ fired clay
1098	10	mod	abt	abt	occ fired clay, heat-cracked stones
1120	12	occ	abt	abt	mod fired clay. Occ heat-cracked stone
1126	13	occ	mod - abt	abt	occ fired clay, pot

*Table 6: Summary of environmental remains; occ = occasional, mod = moderate, abt = abundant, * = probably modern and intrusive*

Latin name	Family	Common name	Habitat	1098 (CG02)	1120 (CG11)
Charred plant remains					
Avena sp				24	
Triticum aestivo-compactum grain	Poaceae	club wheat	F	17	
Triticum aestivo-compactum type grain	Poaceae	club wheat	F		25
Triticum sp (free-threshing) grain	Poaceae	free-threshing wheat	F	120	118
Triticum sp (free-threshing) tail grain	Poaceae	free-threshing wheat	F		5
Triticum sp grain	Poaceae	wheat	F	6	
Triticum/*Secale* sp grain	Poaceae	wheat/rye	F		2
Hordeum vulgare grain (hulled)	Poaceae	barley	F	13	6
cf *Hordeum vulgare* grain (hulled)	Poaceae	barley	F		3
Secale cereale grain	Poaceae	rye	F	24	23
cf *Secale cereale* grain	Poaceae	rye	F	3	2
Cereal sp indet grain	Poaceae	cereal	F	60	41
cf *Avena* sp floret	Poaceae	oat	AF		6

Vicia sativa ssp nigra	Fabaceae	common vetch	AB	8	
Vicia/*Lathyrus* sp	Fabaceae	vetch/pea	ABCD	49	19
Persicaria/*Polygonum* sp	Polygonaceae	knotgrass	AB	1	
Rumex acetosella	Polygonaceae	sheep's sorrel	ABD	2	
Atriplex sp	Amaranthaceae	orache	AB		2
Centaurea cf *cyanus*	Asteraceae	cornflower	D		1
Lapsana communis	Asteraceae	nipplewort	BCD	1	
Anthemis cotula	Asteraceae	stinking chamomile	AB	2	3
Glebionis segetum	Asteraceae	corn marigold	AB	2	
Tripleurospermum cf *inodorum*	Asteraceae	scentless mayweed	AB	2	
Eleocharis sp	Cyperaceae	spike-rush	E	1	
Carex sp (3-sided) nutlets	Cyperaceae	sedge	CDE	1	
Bromus sp grain	Poaceae	brome grass	AF	3	
Poaceae sp indet grain	Poaceae	grass	AF	120	43
Poaceae sp indet grain (small)	Poaceae	grass	AF	6	13
Poaceae sp indet grain (1mm)	Poaceae	grass	AF	1	3
Poaceae sp indet grain (2mm size)	Poaceae	grass	ABD		1
unidentified seed	unidentified			17	
Total items				706	632
Items per litre				70.6	63.2
Uncharred plant remains					
Ranunculus acris/*repens*/*bulbosus*	Ranunculaceae	buttercup	CD	5	
Rubus sect *Glandulosus*	Rosaceae	bramble	CD		1

Table 7: Plant remains from bulk samples (Quantified); where grain fragments were present, whole grain equivalents were counted

Key:

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	* = fragments
F = cultivar	

Context	Sample	Preservation type	Species detail	Category remains	Quantity/diversity	Comment
1056	5	ch	*Vicia sativa* ssp nigra	seed	+/low	
1056	5	ch	unidentified wood fragments	misc	+/++ low	
1056	5	ch	*Triticum aestivo-compactum* grain, *Triticum* sp (free-threshing) grain, cf *Secale cereale* grain, Poaceae sp indet grain	grain	+++/low	Mostly *Triticum* sp free threshing grain
1056	5	unch*	unidentified root fragments (herbaceous)	misc	+++/low	
1059	6	ch	*Vicia*/*Lathyrus* sp	seed	+/low	
1059	6	ch	*Triticum* sp (free-threshing) grain, *Triticum*/*Secale* sp grain, cf *Avena* sp grain	grain	++/low	
1059	6	unch*	unidentified root fragments (herbaceous), unidentified herbaceous fragments	misc	++++/low	
1059	6	unch*	*Ranunculus acris*/*repens*/*bulbosus*	seed	+/low	
1074	8	ch	*Triticum aestivo-compactum* grain, *Triticum* sp (free-threshing) grain, *Triticum*/*Secale* sp grain, *Hordeum vulgare* grain	grain	++/low	

			(hulled), *Avena* sp grain, Poaceae sp indet grain			
1074	8	ch	*Vicia*/*Lathyrus* sp, *Persicaria*/*Polygonum* sp	seed	+/low	
1074	8	unch*	unidentified root fragments (herbaceous), unidentified herbaceous fragments	misc	++++/low	
1098	10	ch	*Triticum aestivo-compactum* grain, *Triticum* sp (free-threshing) grain, *Hordeum vulgare* grain (hulled), *Secale cereale* grain, *Avena* sp grain, *Bromus* sp grain, Poaceae sp indet grain, Poaceae sp indet grain (small)	grain	+++/low	
1098	10	ch	*Glebionis segetum*, *Tripleurospermum inodorum*	seed	+/low	
1098	10	ch	*Quercus robur*/*petraea* wood, unidentified wood fragments	misc	+++/low	
1098	10	unch*	unidentified root fragments (herbaceous)	misc	+++/low	
1120	12	ch	*Vicia sativa*, *Vicia sativa* ssp *nigra*	seed	+/low	
1120	12	ch	*Triticum aestivo-compactum* grain, *Triticum* sp (free-threshing) grain, *Hordeum vulgare* grain (hulled), *Secale cereale* grain, *Avena* sp grain, Poaceae sp indet grain, Poaceae sp indet grain (small)	grain	+++/low	Rye moderate
1120	12	unch*	*Rubus* sect *Glandulosus*	seed	+/low	Single seed
1120	12	wa	unidentified root fragments (herbaceous), unidentified herbaceous fragments	misc	+/low	
1126	13	ch	*Triticum aestivo-compactum* grain, *Triticum* sp (free-threshing) grain, *Secale cereale* grain, *Avena* sp grain	grain	++/+++/low	
1126	13	unch*	unidentified root fragments (herbaceous)	misc	+++/low	

Table 8: Plant remains from bulk samples (Scanned assessment results)

Key:

preservation	quantity
ch = charred	+ = 1 - 10
min = mineralised	++ = 11- 50
wa = waterlogged	+++ = 51 - 100
Unch* = waterlogged or uncharred	++++ = 101+
	* = probably modern and intrusive ** = oyster shell/fragments

7.1.3 Discussion

The abundant charred cereal crop waste indicates that cereals were processed in bulk on the settlement, and that arable agriculture was an important part of the economy. This would be consistent with a location on soils of moderate to high fertility, although impeded drainage may have presented some challenges to cultivation.

The predominance of free-threshing wheat, rather than glume or hulled wheats, is characteristic of cereal cultivation from mid-Saxon times, and so is consistent with the late-Saxon (or later) date (Carruthers and Hunter-Dowse 2019). The presence of rye is of note, as rye, as part of a mixed cereal crop (or maslin; typically wheat and rye) is also common on loamy or sandy soils at this time. Rye normally out competes wheat on droughty soils of low fertility (Behre 1992). As the soils do not fall into this category, the inclusion of rye may result more from cultural norms, and the use of maslin cultivation as an insurance against crop failure due to unfavourable weather.

7.2 Animal bone by Jo Losh

A small assemblage of animal bone was recovered by hand from nine contexts within the excavation area (Table 9). The condition of the bone was varied, mostly they were in good condition although in contexts 1025 and 1048 (both CG01) they were slightly degraded and heavily degraded in 1122 (CG03) and 1138 (CG10). A single small fragment of burnt bone was recovered from 1098 (CG02). The assemblage was very fragmented making identification of anatomical elements and species difficult, in most cases only one element was identified from each context. Cattle was the most common species, represented by a fragment of pelvis, a calcaneus and third phalanx in contexts, 1017 (CG03), 1025, and 1038 (CG03) respectively. Elements of sheep/goat type were present, a vertebrae body fragment in context 1048 and a heavily degraded tibia in 1138. A horse metapodial was present in context 1109 (CG07). None of the recovered bones showed any signs of butchery marks or pathologies, although the level of fragmentation makes it difficult to be sure.

Overall, this assemblage is considered to represent the remains of domestic waste, although it is too small and fragmented to provide any detail.

context	material class	material subtype	Count	Weight (g)	Feature type	Period	Phase	comments
1017 (CG03)	bone	animal bone	14	184	Ditch	medieval	3	Large fragments of cortical bone, 4 identifiable as pelvis of cattle type. Remaining fragments unidentifiable. Good condition.
1021 (CG03)	bone	animal bone	34	132	Ditch	medieval	3	Unidentifiable fragments, good condition.
1025 (CG01)	bone	animal bone	25	163	Ditch	late-Saxon	2	Two identifiable fragments, calcaneus of possible cattle type, and articular surface of a long bone of unknown type. Remaining unidentifiable fragments, mostly in good condition, some fragments are slightly eroded.
1038 (CG03)	bone	animal bone	2	18	Ditch	medieval	3	3rd phalanx of cattle in two fragments. Good condition.
1048 (CG01)	bone	animal bone	1	2	Ditch	late-Saxon	2	Single fragment of vertebrae body, sheep/goat. Slightly worn.
1098 (CG02)	bone	animal bone	1	1	Ditch	late-Saxon	2	Fragment of burnt bone, unidentifiable. Good condition.
1109 (CG07)	bone	animal bone	7	184	Ditch	medieval	3	Fragment of pelvis, acetabulum, uncertain species. Long bone shaft in two fragments possible horse metapodial. Good condition.
1122 (CG03)	bone	animal bone	7	3	Ditch	medieval	3	Small degraded fragments.
1138 (CG10)	bone	animal bone	3	53	Ditch	medieval	3	Single bone in three fragments. Trinagular cross section, possible tibia of sheep/goat. Very degraded.
Total:			94					

Table 9: Quantification of animal bone by context

8 Radiocarbon dating by Elizabeth Pearson

A single radiocarbon determination has been achieved from fill 1010 of ditch 1009 (CG02), dating the deposit to the late-Saxon period.

Samples were dated at Beta Analytic by AMS.

The results are conventional radiocarbon ages (Stuiver and Polach 1977) and are listed in Table 10. The calibrated date ranges for the samples have been calculated using the maximum intercept method (Stuiver and Reimer 1986), and are quoted with end points rounded outwards to ten years. The probability distributions of the calibrated dates calculated using the probability method (Stuiver and Reimer 1993) are shown in the graph in Appendix 3 (Beta Analytica report). They have been calculated using OxCal v4.2 (Bronk Ramsey 2009) and the current internationally agreed atmospheric calibration dataset for the northern hemisphere, IntCal13 (Reimer *et al* 2013).

Laboratory code	Context number	Material	$\delta^{13}C$ (‰)	Conventional Age	OxCal calibrated age (95.4% probability or 2 sigma)
Beta - 655100	1010	Charred plant remains: *Triticum* sp free-threshing grain	-20.5 ‰	980 +/- 30 BP	990 – 1160 cal AD

Table 10: Radiocarbon dating results

9 Discussion

The archaeological investigations at Claphill Lane, Rushwick, have identified archaeological remains dating from the Roman, Saxon, medieval, post-medieval and modern periods. No prehistoric features or artefacts were identified, even within later contexts, and so it is considered that the site was unoccupied until the start of the Romano-British period. Features from all periods were predominantly agrarian in character, and the presence of a late-Saxon post-structure may hint at the presence of a small, rural farmstead, before the area was returned to agriculture in the late-11th or 12th century AD.

9.1 Romano-British

The artefactual assemblage indicates that activity at the site began in the early-Roman period, probably within the late-1st and 2nd centuries AD. Stratified Romano-British features on the site were limited to a group of four post-holes, and two gullies located within the south-west of the area. The features were only tentatively dated, and it remains entirely possible that the Roman material recovered was residual, and the features were associated with the more numerous later activity.

Four-post structures are a feature common throughout the later-Bronze Age and Iron Age, although examples have been found in Roman contexts also (Smith 2016). Interpretation of the function of these structures has ranged from shrines (Downes 1997) to domestic structures (Moore 2003), however it is most commonly accepted that these structures functioned as raised granaries (Gent 1983). Further evidence for this was recorded on a site *c* 7km south-east at Clifton Quarry, Worcestershire (Mann and Jackson 2018). Archaeological investigations at the quarry identified a site containing up to 103 four-post structures, a large number of which contained charred grain deposits. The site, which dated from the early to middle-Iron Age, has been interpreted as a major grain storage area in what was a principally arable landscape on the terraces adjacent to the River Severn (*ibid*).

Four-posters are less common within Roman contexts and have been thought to represent a hangover of Iron Age agricultural practice and a delay in the uptake of Roman farming techniques (Morris 1979), although there are examples of this practice continuing into the 3rd and 4th centuries AD (Seager Smith and Fitzpatrick 2000). The four-post structure (CG15) at Claphill Lane is considered likely to represent the remains of a raised granary, and when allied to the residual artefactual assemblage, hints that the excavation area is located on the periphery of a Roman rural settlement site.

The landscape on the western bank of the River Severn is increasingly being understood as one focussed on the movement and procurement of resources, predominantly livestock, for the food supply of Roman Worcester (Bradley *et al* 2018; Dalwood *et al* 2018; Wilkins 2021). Recent sites to

the immediate west of Dines Green, *c* 1km north of Rushwick, are thought to represent farmsteads and enclosures as part of this network (Wilkins 2021; Wilkins and Lovett 2023) and so any settlement at Rushwick would probably form part of this resource procurement zone.

9.2 late-Saxon (9th to late-11th century AD)

The period of Romano-British activity at the site was hard to accurately define but it is probable that there was a period of inactivity before a second phase of occupation developed sometime before the 9th century AD. There were no structural features of this date, however, the presence of a 6th to late-8th century loomweight hints at some mid-Saxon activity within the immediate vicinity. The primary evidence for early-medieval activity on the site, however, could be dated to the late-Saxon period and this second discernible phase comprised the construction of up to four ditches and a post-built structure (CG16), probably representing the remains of a building. Rural sites with evidence of early-medieval occupation within the West Midlands are rare, and so whilst the activity of this date at Claphill Lane is limited, it is almost certainly of regional significance.

The late-Saxon ditches, when observed in plan, did not appear to form enclosures or field systems but rather delineate two possible routes or trackways across the site. It should be noted however, that the short length of the ditches, and absence of early-medieval features elsewhere makes this difficult to confirm. Ditches CG01 and CG02 in the south of the site are likely to have formed a north-west to south-east aligned trackway which widened to the west creating a funnel-like appearance. This is likely to have been an intentional feature associated with the control of movement through the trackway and is similar in form to a Romano-British trackway identified on a site at Broadway, Worcestershire (Wilkins and Bradley forthcoming). The overall length of the trackway is unclear and it is possible that the eastern termini of both ditches was caused by later truncation and a drop in height towards the south-east of the site.

A second potential trackway, formed via ditches CG05 and CG09, is less clear it was broadly contemporary with ditch CG02 to the south. Two segments of ditch CG05 extended *c* 5m south within trackway CG01/02 and may have formed an internal partition. Interestingly, CG05 appeared to respect the post-built structure CG16, also located within the trackway, suggesting the structure was erected prior to the construction of the ditches.

The partial remains of a post-built structure (CG16), are likely to represent the remnants of a rectangular, Saxon building and the source of the large quantity of burnt daub recovered from nearby features. The only surviving postholes comprised those which formed the northern long-wall and western end-wall of the building. The absence of structural remains on the south and east side of the building may be explained by the topography of the site which slopes downwards in both these directions, though later truncation remains a possibility. The presence of both a long and end-wall allows the size of the building to be estimated, at approximately 10m by 5m, and this is directly comparable to up to seven similar structures identified in the south-east of the county at a site near to the Badsey Brook in Broadway (Wilkins and Bradley forthcoming). The structures at Broadway were likewise formed via rectangular arrangements of postholes, while radiocarbon dating on one building indicated the settlement was occupied between the 7th and 9th centuries AD, broadly contemporary to the structure identified at Rushwick.

Other early-medieval sites within Worcestershire have predominantly been characterised by the presence of sunken floored buildings (SFB's), such as at Ripple (Barber and Watts 2008), Grimley (Webster 2017), Broadway (Cornah and Mann 2022), and Kemerton (Dinn and Evans 1990). Subsequently, post-built structures within the county are comparatively rare. Within the wider West Midlands region, the best examples of early-medieval post-built structures were located at a site in Catholme, Staffordshire, where a settlement comprising some 65 buildings was identified (Losco-Bradley and Kinsley 2002). Aside from 13 sunken floored buildings, they predominantly comprised post-built structures of similar form to CG16, and also to those identified at Broadway. On average the Catholme structures measured between 4m and 12m in length, and between 3.50m and 6m in width, which again is broadly comparable to the structure CG16.

Analysis of the Catholme structures identified several with features described as 'end-wall annexes', which largely comprised a squared, or semi-circular, arrangement of postholes located externally to an end-wall (Dixon 2002). The precise function of these features is unknown, but they are understood to be separate rooms, and may comprise later additions to the primary structure. The three large postholes (1087, 1089, and 1133) at the western end-wall of CG16 may be associated with an 'annex' like those observed at Catholme, though given the poor preservation of the building at Rushwick, this remains unconfirmed. The northern long-wall of structure CG16 displayed some irregularity in the positioning of the postholes and this is also a feature that appears common to early-medieval post-built structures as has been discussed in some detail for the Catholme site (*ibid*). Here it has been suggested that rather than simply representing a re-build of the structure, it may reflect the use of irregularly shaped timbers, and the cutting of postholes seemingly out of line, in order to better suit the material being used.

Early-medieval wall-post buildings such as the example at Rushwick, are commonly understood to represent domestic structures as opposed to the more industrial roles assigned to sunken floored buildings. It is likely, therefore, that the structure at Rushwick represents a small rural farmstead and the ecofact assemblage, whilst limited, suggests that cereal crops were being grown and processed on the site. The charred-grain assemblage included large quantities of free-threshing wheat and some Rye, grains which are common on late-Saxon sites. Radiocarbon dating on several grains recovered from the basal fill of ditch CG02 returned a date of 990 – 1160 cal AD, confirming the artefactual dating of the late-Saxon phase. The animal bone assemblage of cattle and sheep is too small to draw any conclusions from, though in all probability, probably represents the consumption of livestock on site.

The settlement of Rushwick is not recorded in the Domesday Book of 1086 (see Section 2.3) and is only mentioned for the first time in 1299. It seems likely that throughout the early-medieval and immediate post-conquest periods, there was no nucleated settlement at Rushwick, and the small farmstead at Claphill Lane may have been one of several dispersed farms attached to, or under the influence of, the early-medieval Episcopi Manor at Lower Wick, which itself formed part of the wider *Wulfereslaw* hundred (Hooke 2009, 97).

9.3 Medieval (late-11th to mid-14th century AD)

Medieval activity at the site could be broadly separated into two phases of activity, the first of which appeared to comprise some continuity of the late-Saxon occupation of the site, post-Conquest, into the late-11th and possibly early-12th century AD. Evidence then indicated there was a change in land-use during the 12th century, reflected by a series of field-boundary ditches imposed across the earlier site.

It is apparent that at some point possibly in the 11th, or as late as the mid-12th century, the late-Saxon building (CG16) was burnt down and demolished. Subsequently the remaining debris of this event was deposited within the nearby ditches, most notably in CG02 and CG05, but also within nearby medieval ditches CG03, CG04, and CG11. Deposits within these ditches contained an abundance of burnt daub, some of which contained wattle impressions and deliberately smoothed surfaces, in addition to a large quantity of charcoal and charred grain. The firing of this building is likely to have coincided with a change in land-use evidenced by the instatement of a new field system comprising ditches CG03/04 and CG10/11.

The medieval field systems were imposed over the top of the previous Saxon site, truncating earlier features such as ditches CG02 and CG09, which also suggests that these features were fully backfilled, perhaps intentionally, at some point within the 12th century. There was some continuation of earlier boundaries, with evidence indicating late-Saxon ditch CG01 in the south of the area was incorporated into the new medieval field system.

Stratigraphically, at least two phases of field system were visible on the site. The 'L' shaped ditch CG07 appeared to form the south-east corner of a second field system which replaced the earlier

boundary CG03/04. Other localised recuts were identified within some of the ditch slots, and these are likely to represent the continued maintenance of the ditches. The function of the boundary formed by ditch CG10/11 is unclear and it may be related with either of the medieval ditches discussed above, but notably it was positioned broadly parallel to the east-west section of CG07 hinting at an association.

Artefactually, the features were indistinct, all containing a similar assemblage of 12th to mid-14th century pottery, typical of a medieval rural site. The pottery assemblage was dominated by poor quality wares and cooking pot which was possibly being used on site by field labourers, though no field ovens were identified within the site. The lack of any pottery later than the mid-14th century, coupled with the recovery of a Henry 1 penny, suggests that activity on the site did not continue past the 12th century. This is perhaps supported by the presence of furrows in Trench 17 of the evaluation and Trench 24 of this project, to the immediate north-west of the excavation area. The furrows did not extend into the excavation area possibly suggesting that the focus of agricultural activity migrated away from the site following this period.

Following the abandonment of the late-Saxon settlement, there was no further evidence of medieval settlement within the excavated area, and it is likely the site remained within the agricultural hinterland of Rushwick, which itself lacked the focus of a typical nucleated medieval settlement and was more of a collection of farmsteads. It is interesting to note that the 12th century changes in land-use identified at the site may coincide with the creation of a manorial estate at Upper Wick, *c* 800m to the south-east, where it is recorded that in *c* 1158 AD, Bishop Alfred of Worcester granted the estate to Osbert D'Abitot.

9.4 Post-medieval and modern

It is apparent that the site remained predominantly agricultural until the 21st century. Following the abandonment of the site between the 12th and 14th centuries, a regime of ridge and furrow cultivation was established to the north-west, and this practice is likely to have continued into the post-medieval period.

Two ditches (CG17 and CG06) were established in the west of the site probably within the 18th-19th centuries and may represent a further change in land-use although this is unclear. Modern ditches CG18 and CG19 are also considered to be agricultural in origin and of little archaeological value.

9.5 Research frameworks

The archaeological investigations at Claphill Lane, Rushwick have the potential to contribute to several of the research agendas laid out in the *The Archaeology of the West Midlands: a framework for research* (Watt 2011).

9.5.1 Early-medieval

The early-medieval activity at Claphill Lane is of regional significance, especially when considering the paucity of similar sites within the county. Specifically, the investigations are able to contribute to a number of themes outlined in Chapter 5.3.3 *The rural landscape: Settlement and land-use*, and presented in Chapter 5.5, as follows:

- Continued search for evidence of all forms of early medieval rural settlements with particular attention to sites where Roman and medieval settlements are juxtaposed.
- Need to record areas of specific land use such as early field systems, etc. the difficulty of dating such features should not mean that they are ignored.

The presence of residual Roman material has long been characteristic of early-medieval sites across the region, but now there is increasing evidence which indicates former Roman rural settlements were being intentionally chosen as sites for reoccupation (Hooke 2011). Within Worcestershire, sites at Ripple (Barber and Watts 2008), Grimley (Webster 2017), and Broadway (Wilkins and Bradley forthcoming) have identified Anglo-Saxon occupation on abandoned Roman farmsteads. The early-

medieval activity at Claphill Lane can be seen to fit into this pattern of settlement, and whilst the Roman phasing is tentative, there was enough material to indicate a Roman site was present within the immediate vicinity.

The presence of several ditches of late-Saxon date have some potential to add to our understanding of land-use within the early-medieval period. Though the features at Claphill Lane were limited, there was some evidence to indicate a trackway across the site, and potentially more importantly, that some of the late-Saxon boundaries were incorporated into the post-Conquest landscape.

9.5.2 Medieval

The medieval (late-11th to mid-14th) activity at Claphill Lane was agricultural in character and largely comprised the instatement of field boundaries. The change in land-use from the late-Saxon settlement has the potential to contribute to several research themes outlined in Chapter 6.2.1 *Rural Settlement*, specifically the agenda presented below:

- The question of village origins remains as critical as ever it was, particularly in light of the regional imbalances in the distribution of work relevant to this issue. Clearly there is a need to work on settlements with pre-Conquest phases, and which might be related to the major socio-economic shifts occurring in English society, such as the development of open fields, the growth of dependent tenure and the onset of manorialism (Hunt 2011).

Within this chapter it is discussed that the social and political upheavals of the 11th and 12th centuries introduced new changing relationships between lords, peasants and land (Hunt 2011). Whilst the excavations at Claphill Lane provide a very small window into the medieval landscape, the results are clearly able to contribute to the theme outlined above. Within the 12th century field boundary ditches, likely to be representing a change in the agricultural regime, were instated across the top of the previous late-Saxon settlement, with some evidence to suggest the building was burnt down. This becomes more significant when contextualised with the historical record which shows that this change in land-use at Claphill Lane coincided with the creation of a new manor at nearby Upper Wick in *c* 1158.

10 Conclusions

The archaeological investigations at land off Claphill Lane, Rushwick, have identified a variety of archaeological features which have been dated from the Romano-British, late-Saxon, medieval, post-medieval and modern periods.

There was a complete absence of prehistoric archaeology, even including residual material within later features, suggesting that initial occupation of the site did not occur until the Romano-British period, likely to have been in the late-1st century AD. Roman features were limited to a few gullies and a possible four-post structure, though the dating remains tentative. There was a considerable amount of Roman residual material, however, recovered from both later features and the overlying soils, indicating that the site lay in close proximity to a Roman rural site.

Following the Roman period, there appeared to then be a break in activity until the site was reoccupied in the late-Saxon period, although the presence of a residual mid-Saxon loomweight hints at an earlier presence. The late-Saxon archaeology was the most significant encountered on site, and comprised several ditches, possibly forming a trackway, and 16 postholes in a broadly rectangular arrangement, likely representing a post-built structure. A sherd of 10th century pottery was recovered from one of the ditches, and charred-grain recovered from a basal fill with a radiocarbon date of 990 – 1160 cal AD.

It is likely that this collection of features represented the remains of a small farmstead, and there was some evidence to suggest it continued into the immediate post-Conquest period. At some point, likely to have been in the late-11th or early-12th century the building was burnt down, and the remains were backfilled into the nearby ditches. A new series of field boundary ditches were then instated across

the site between the 12th and 14th centuries, though the absence of any material later than the mid-14th century, combined with the recovery of a Henry 1 silver penny, suggested that this activity did not necessarily extend past the 12th century. It is of some interest to note that the change in land-use observed on site in the 12th century may have coincided with the creation of a manorial estate at nearby Upper Wick in *c* 1158.

Later features were limited to two post-medieval field boundary ditches, and two drainage ditches of modern date. It is apparent that following the 12th century the site itself remained primarily agricultural until the 21st century.

The methods adopted allow a high degree of confidence that the aims of the project have been achieved. Conditions were suitable in all of the trenches to identify the presence or absence of archaeological features. It is considered that the nature, density and distribution of archaeological features provides an accurate characterisation of the development site as a whole.

11 Project personnel

The fieldwork was led by Jamie Wilkins, ACIfA, assisted by Graham Arnold, ACIfA, Chris Crump, PCIfA, Sophie Hobday, PCIfA, Abbie Horton, PCIfA, Constance Mitchell, PCIfA, and Yago Terroba-Souto, PCIfA. Tim Cornah, ACIfA, undertook the aerial photography, and the metal detecting of the site was undertaken by Dean Crawford.

The fieldwork was managed by Tom Vaughan, MCIfA, and the post-excavation stage of the project was managed by Derek Hurst, MCIfA. The report was produced and collated by Jamie Wilkins. The figures were prepared by Jamie Wilkins and Abbie Horton. Specialist contributions and individual sections of the report are attributed to the relevant authors throughout the text.

12 Acknowledgements

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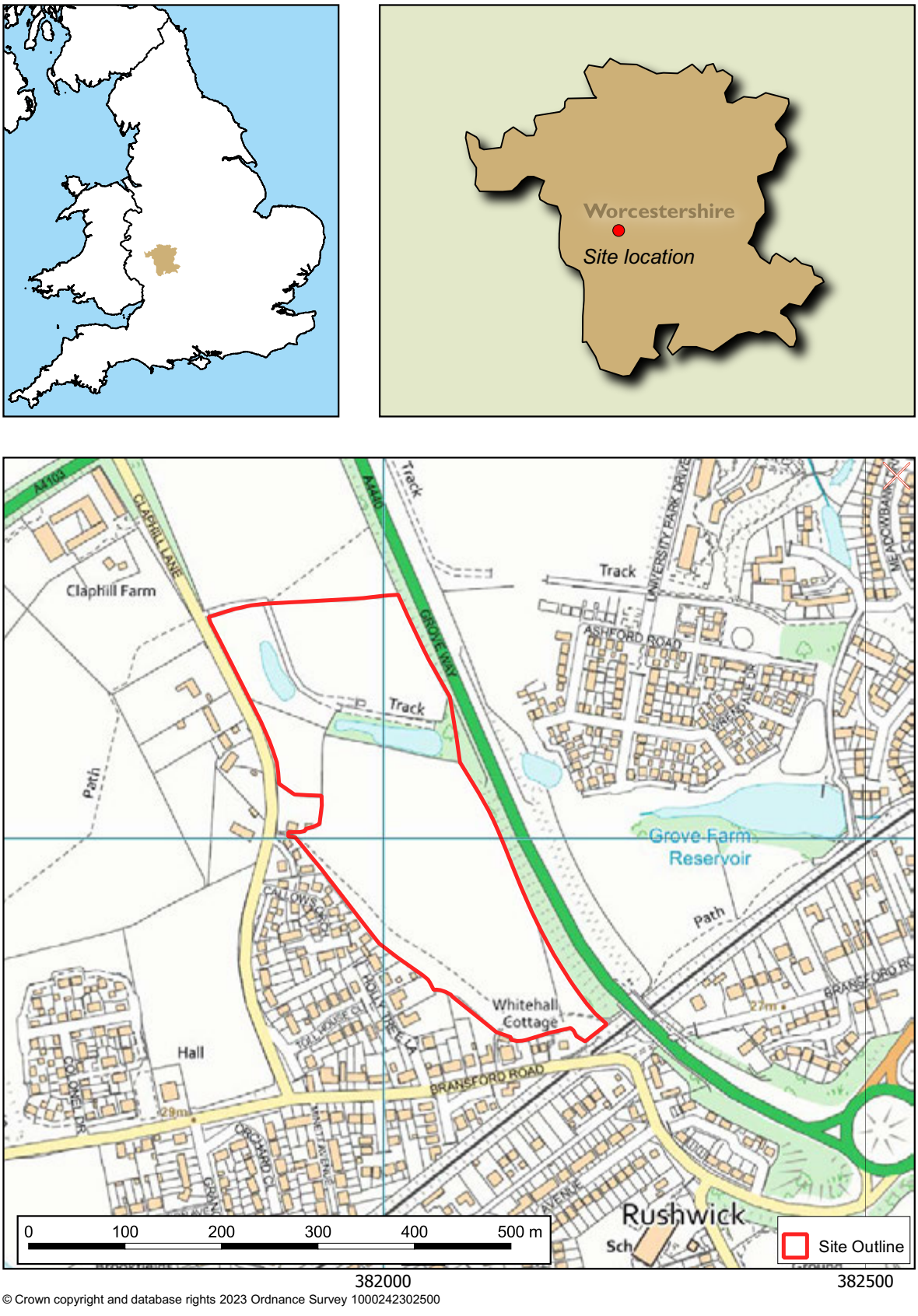
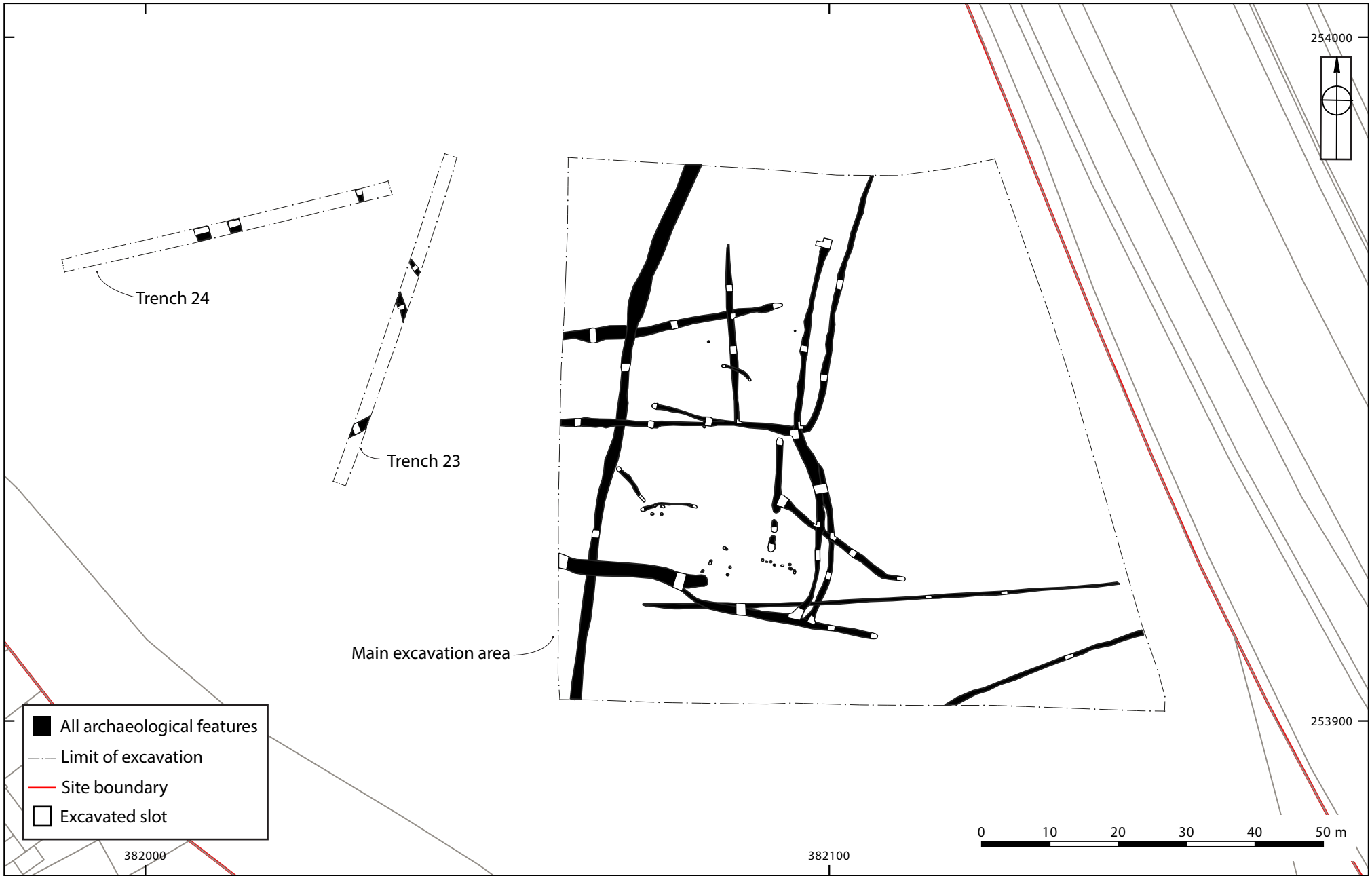
Figures

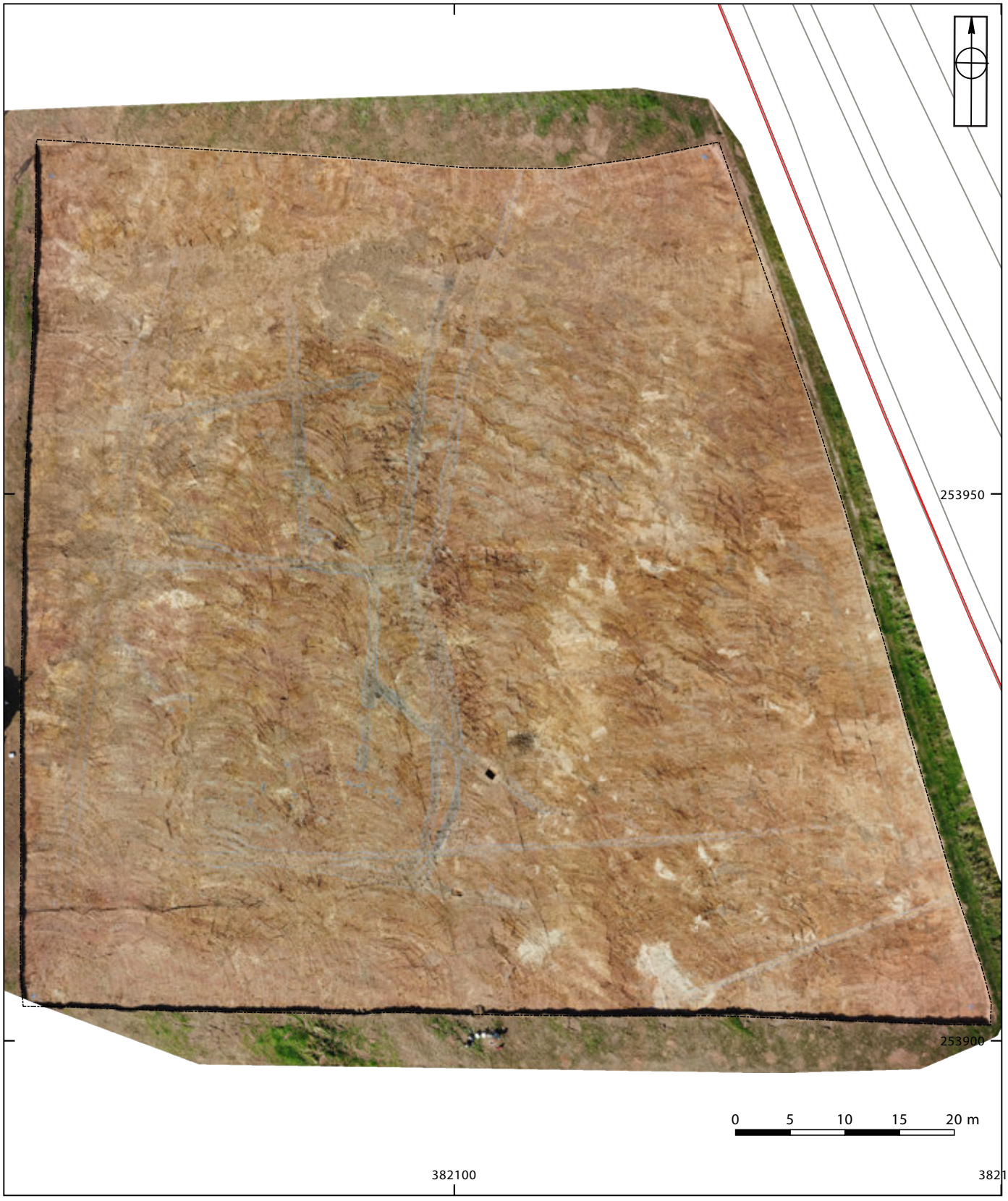


Location of the site *Figure 1*

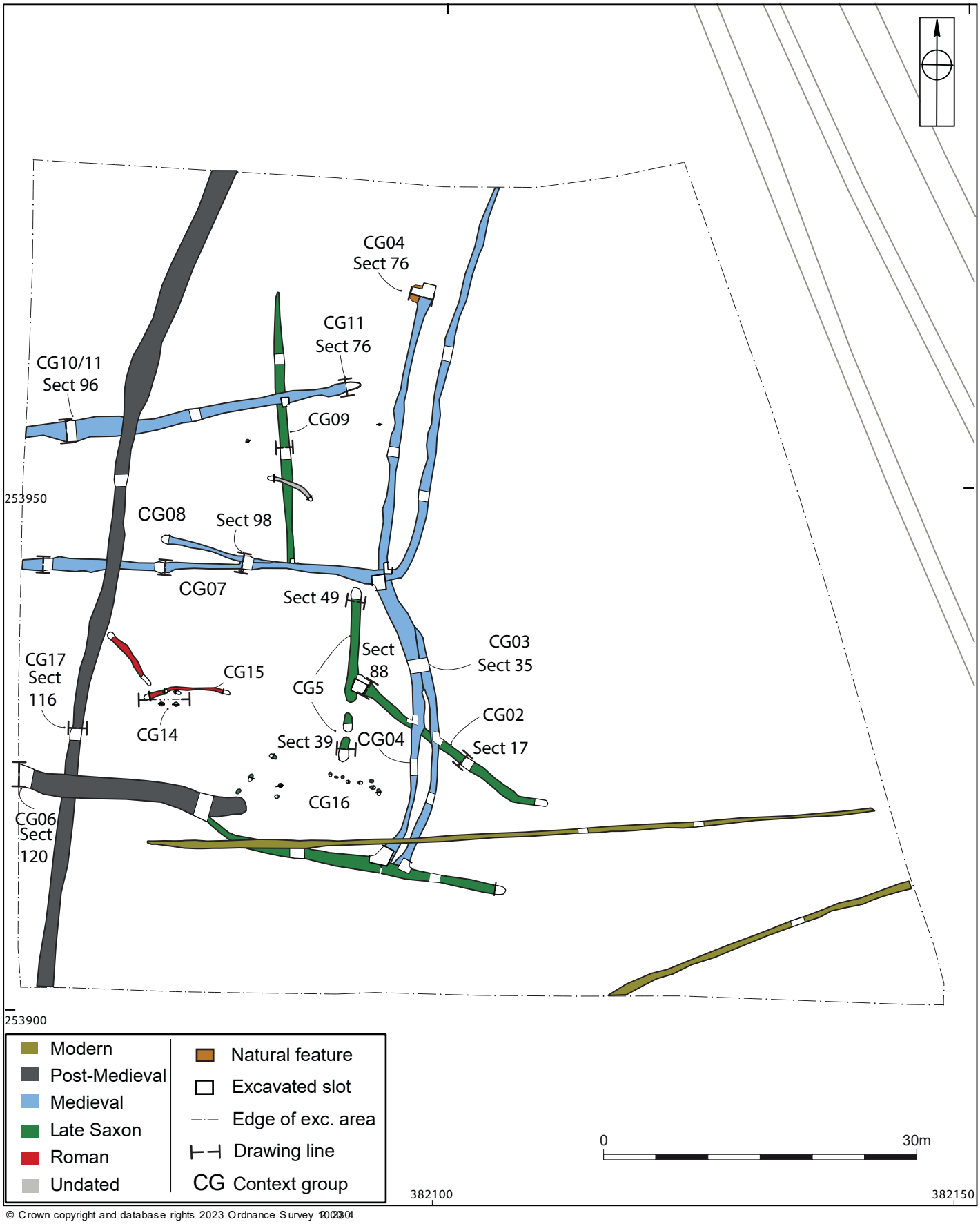


Trench location plan showing all archaeological features

Figure 2

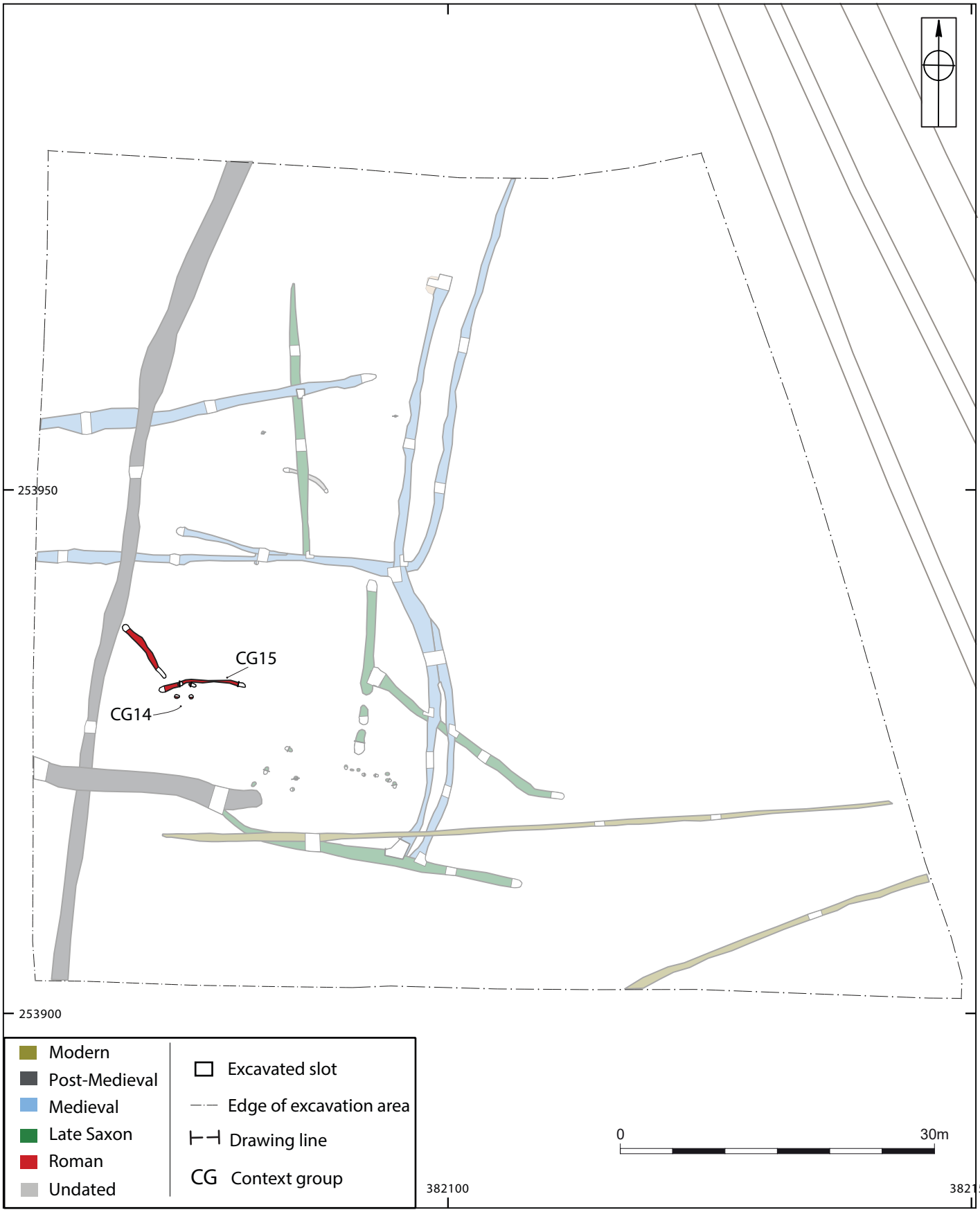


Aerial photograph of excavation area *Figure 3*



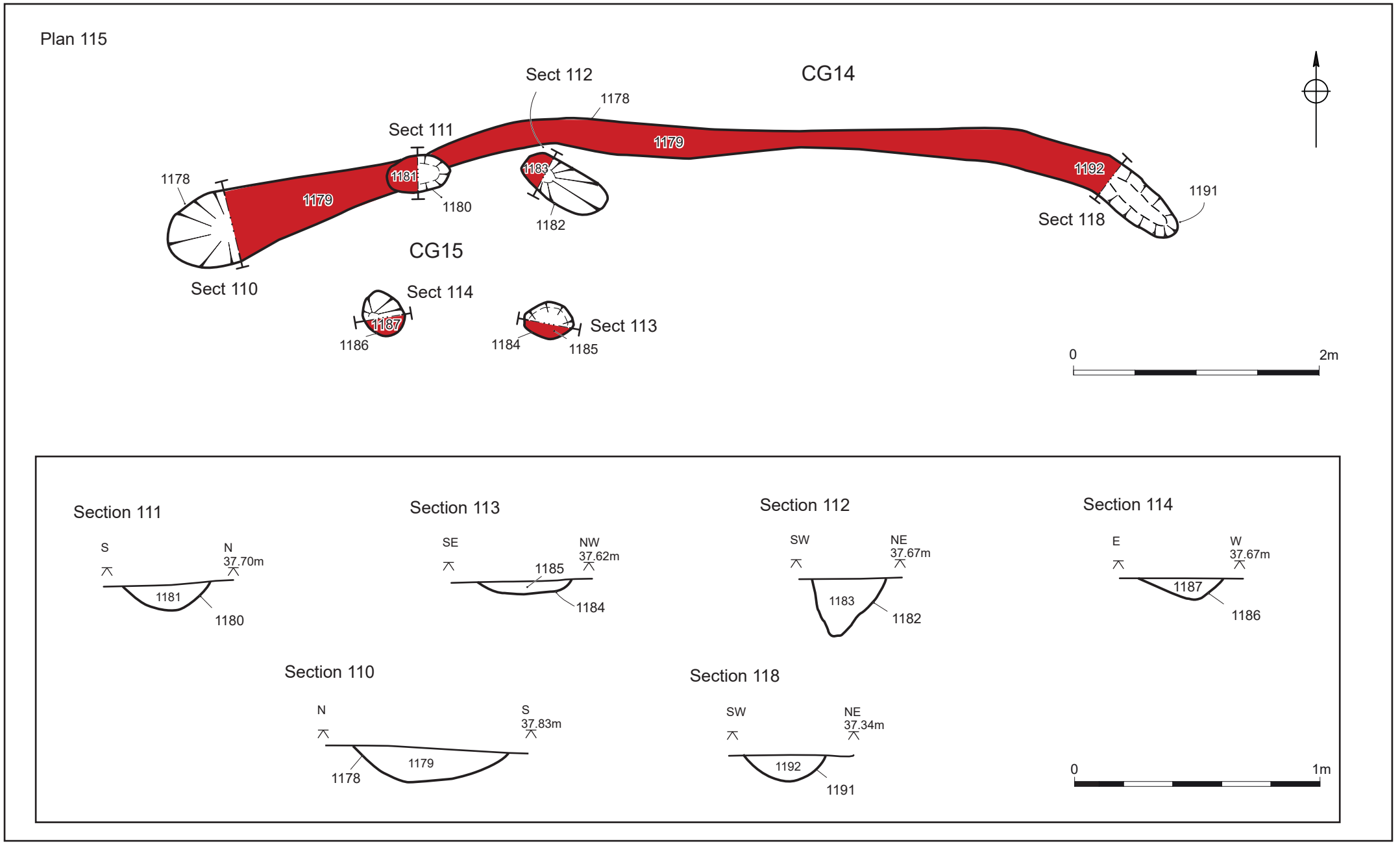
Phased plan of archaeological features

Figure 4



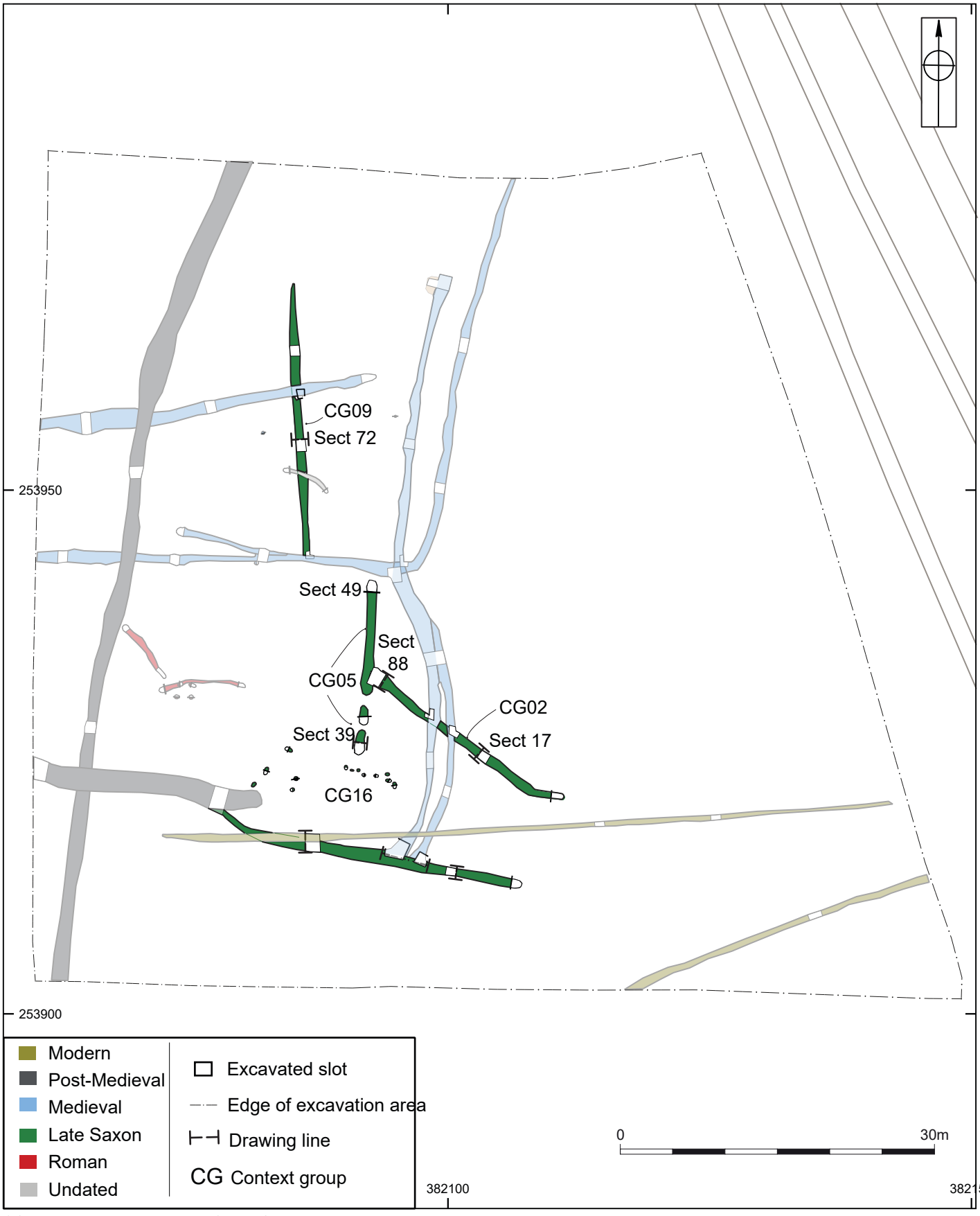
Plan of Roman archaeological features

Figure 5



Plan and sections of Roman four-post structure CG15 and gully CG14

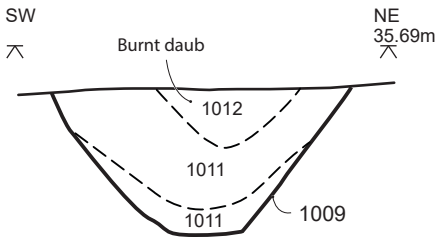
Figure 6



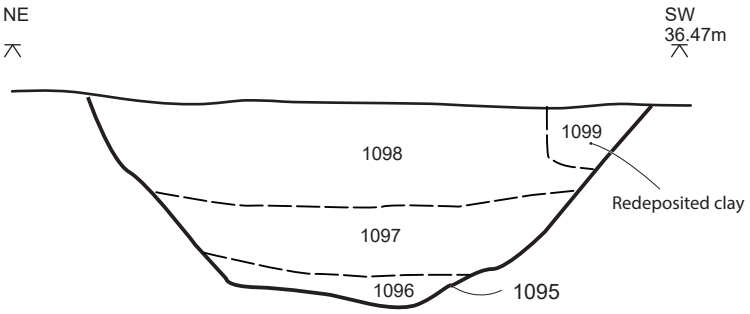
Plan of late-Saxon features CG02, CG05, CG09 and CG16 Figure 7

Context Group 2

Section 17

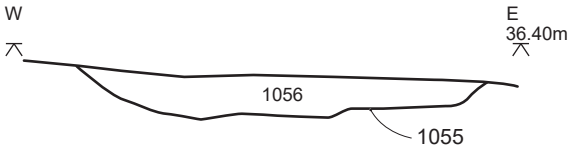


Section 88



Context Group 5

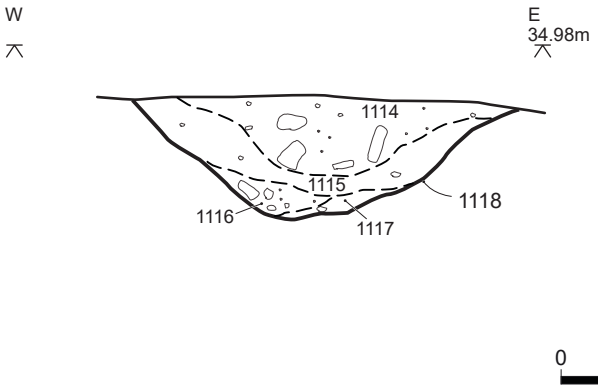
Section 39



Section 49

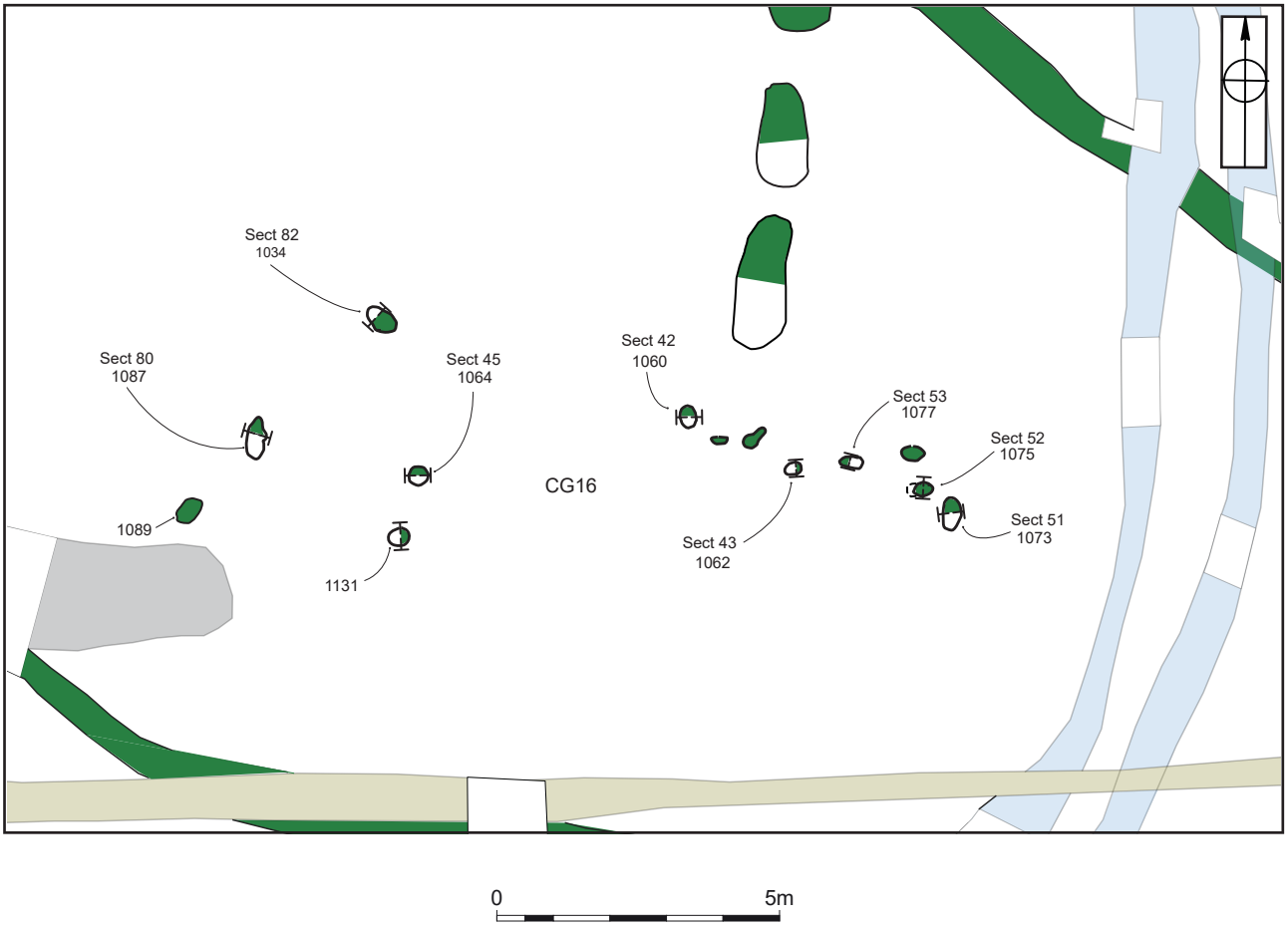
Context Group 9

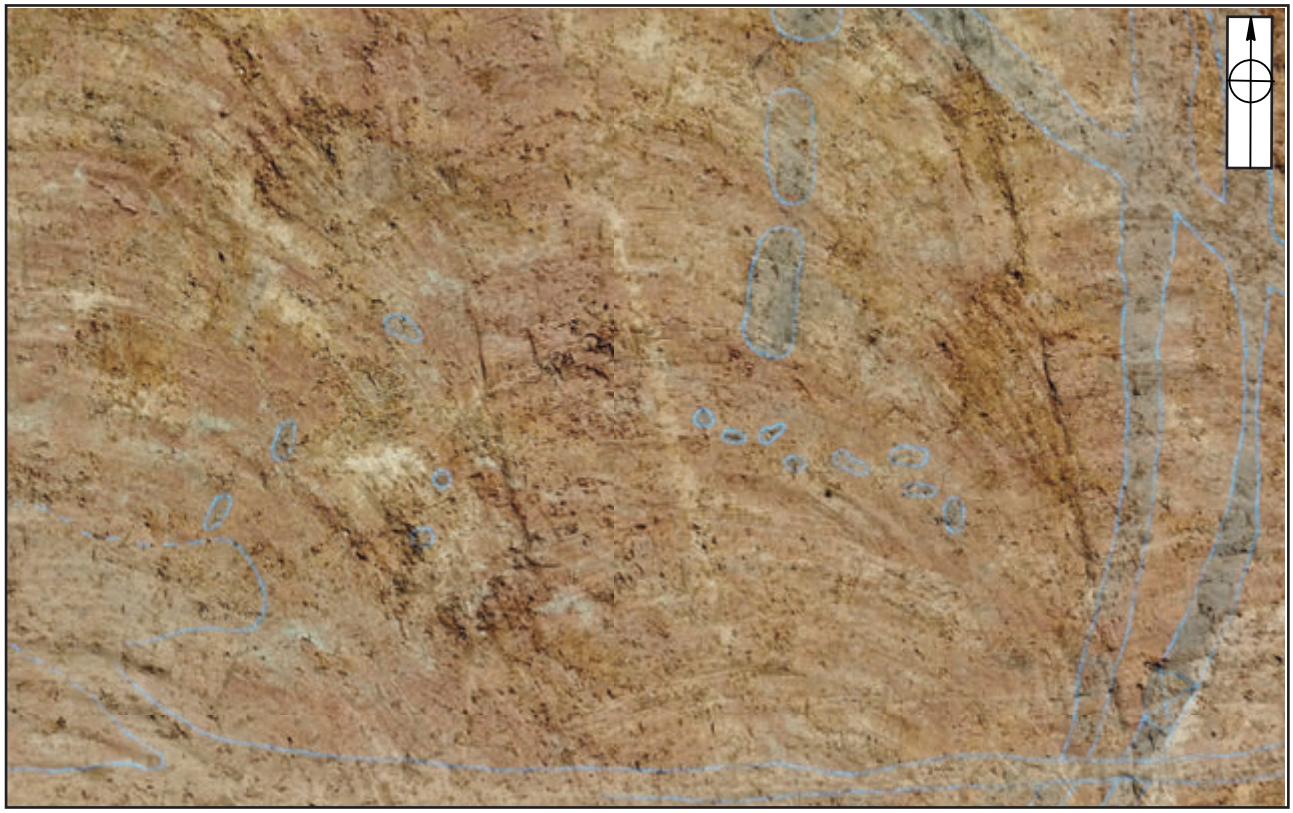
Section 72



Sections of late-Saxon features

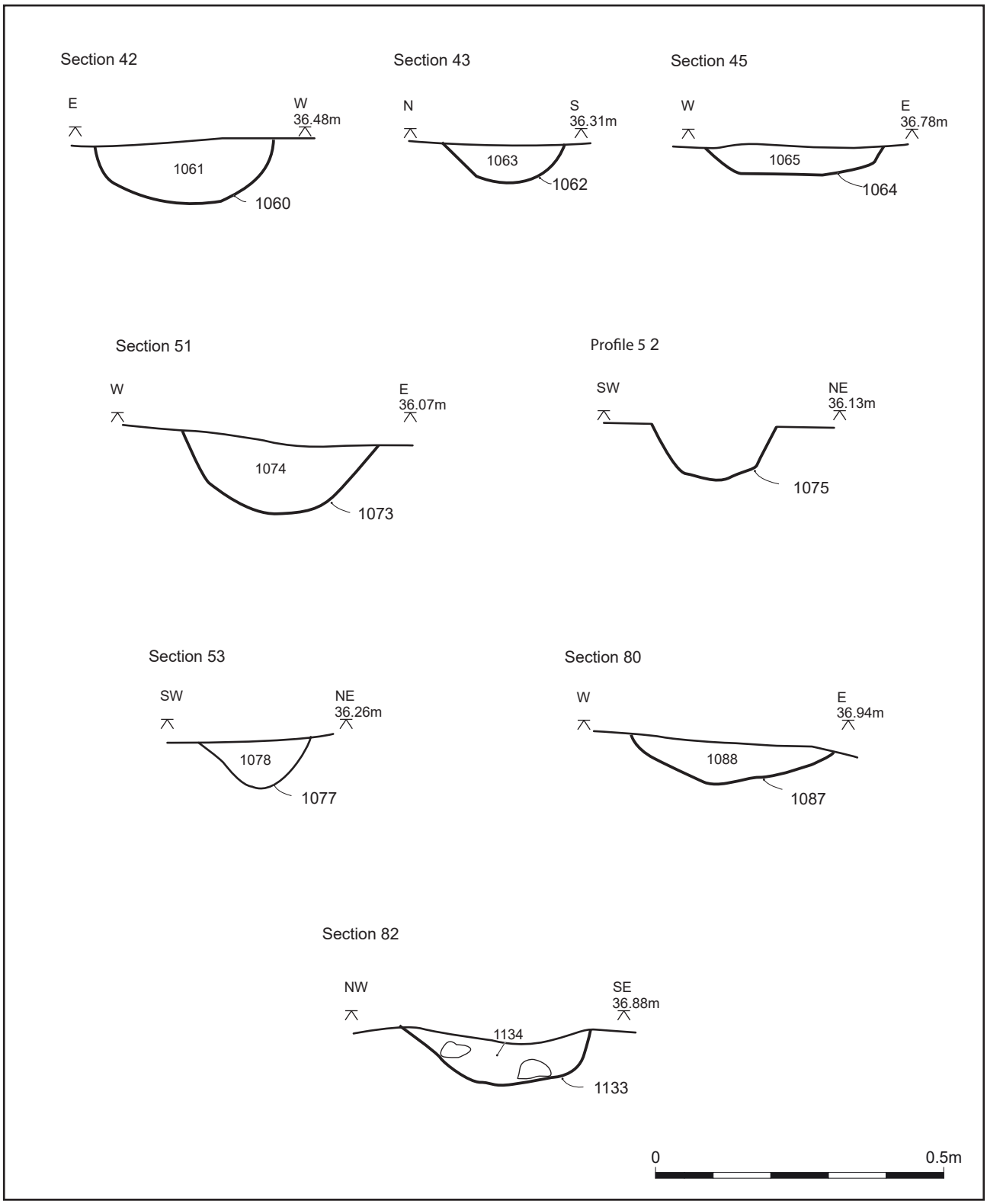
Figure 8



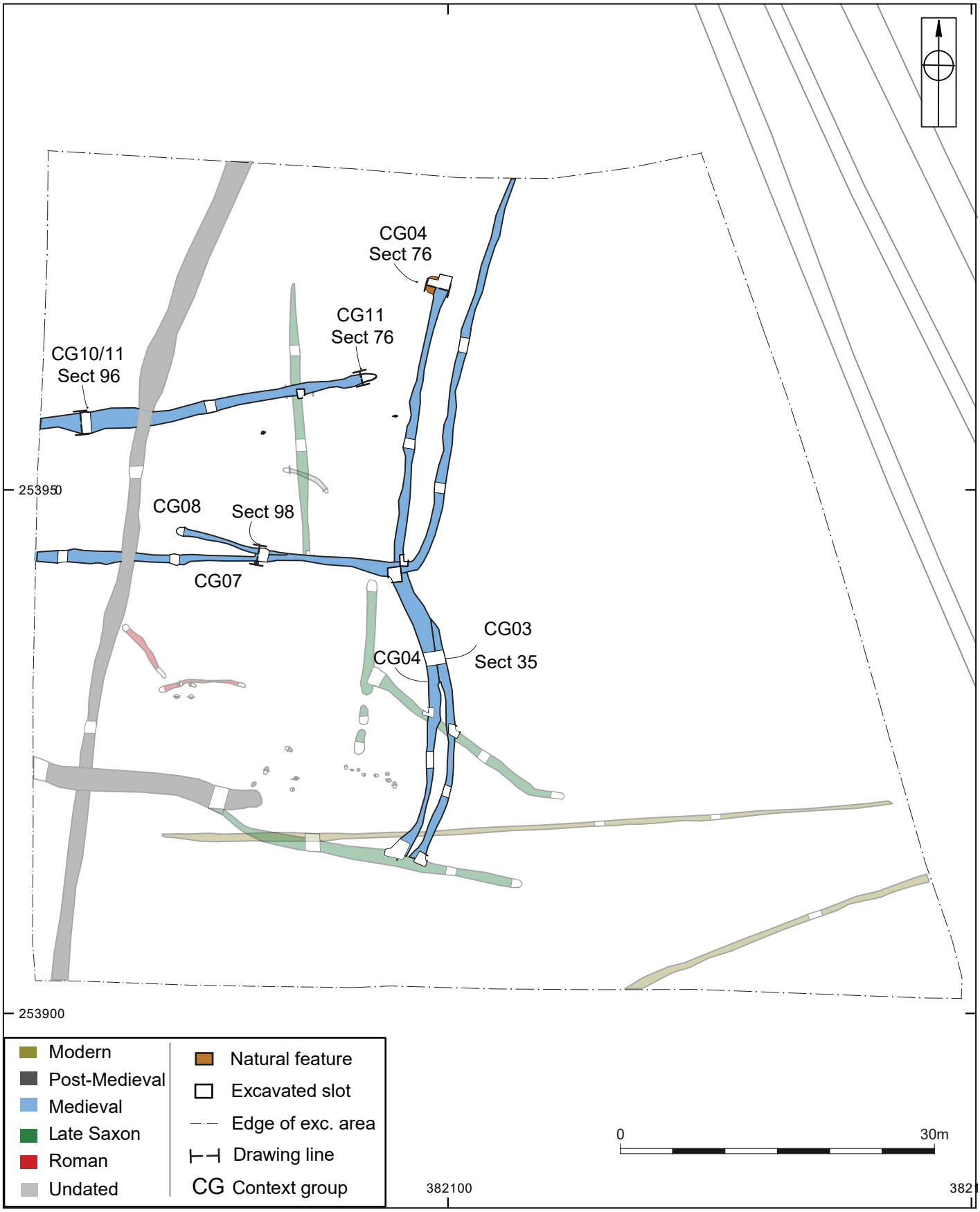


Plan (above) and aerial photograph (below) of late-Saxon post-structure CG16

Figure 9



Sections and profiles of postholes associated with late-Saxon structure CG16 *Figure* 10

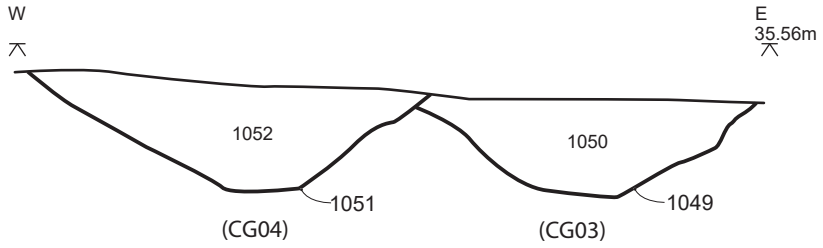


Plan of medieval archaeological features

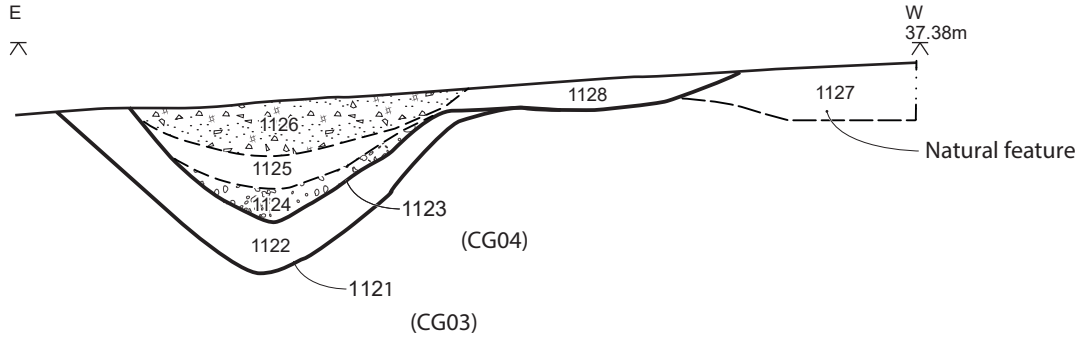
Figure 11

Context group 3 and 4

Section 35

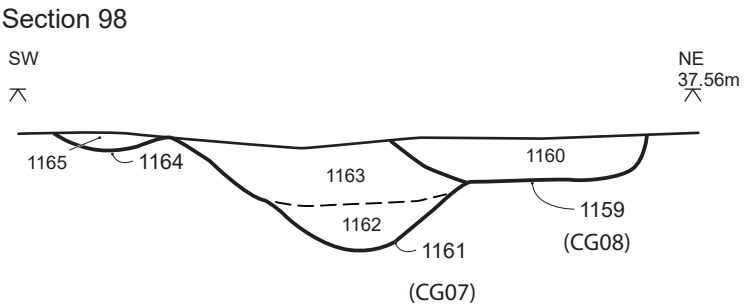


Section 76



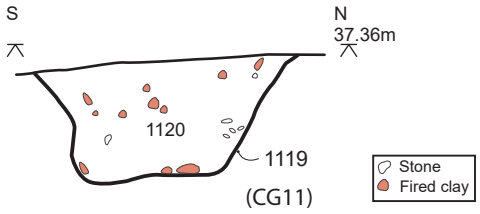
Context group 7 and 8

Section 98

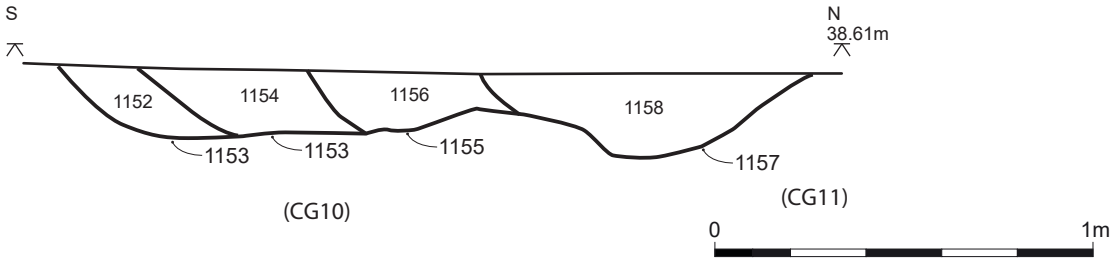


Context group 10 and 11

Section 74



Section 96



Sections of medieval features

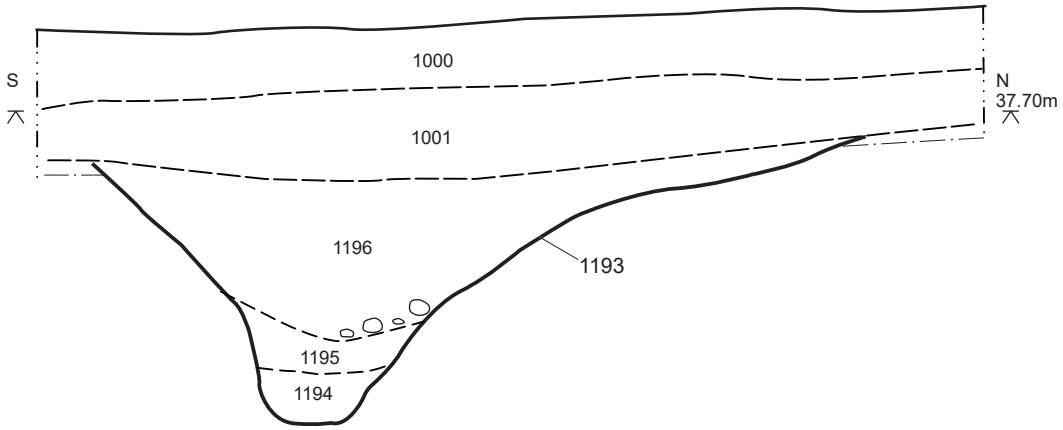
Figure 12

Plan of post-medieval features

Figure 13

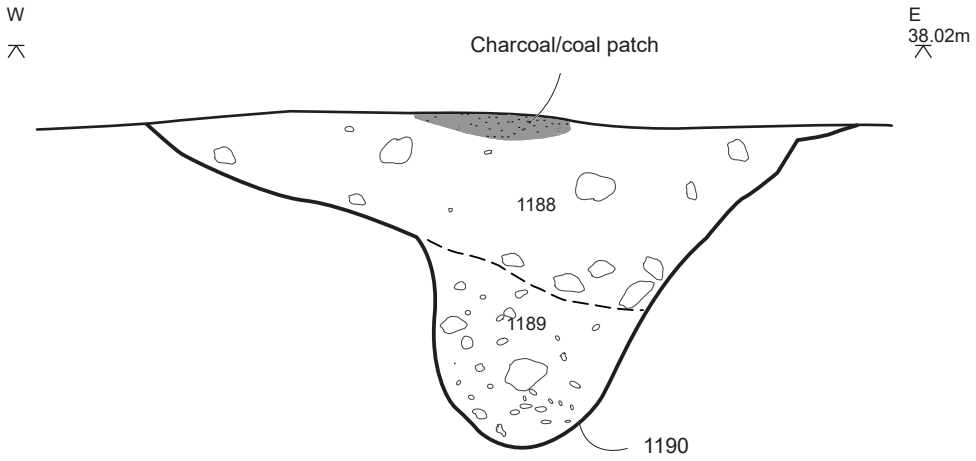
Context group 06

Section 120

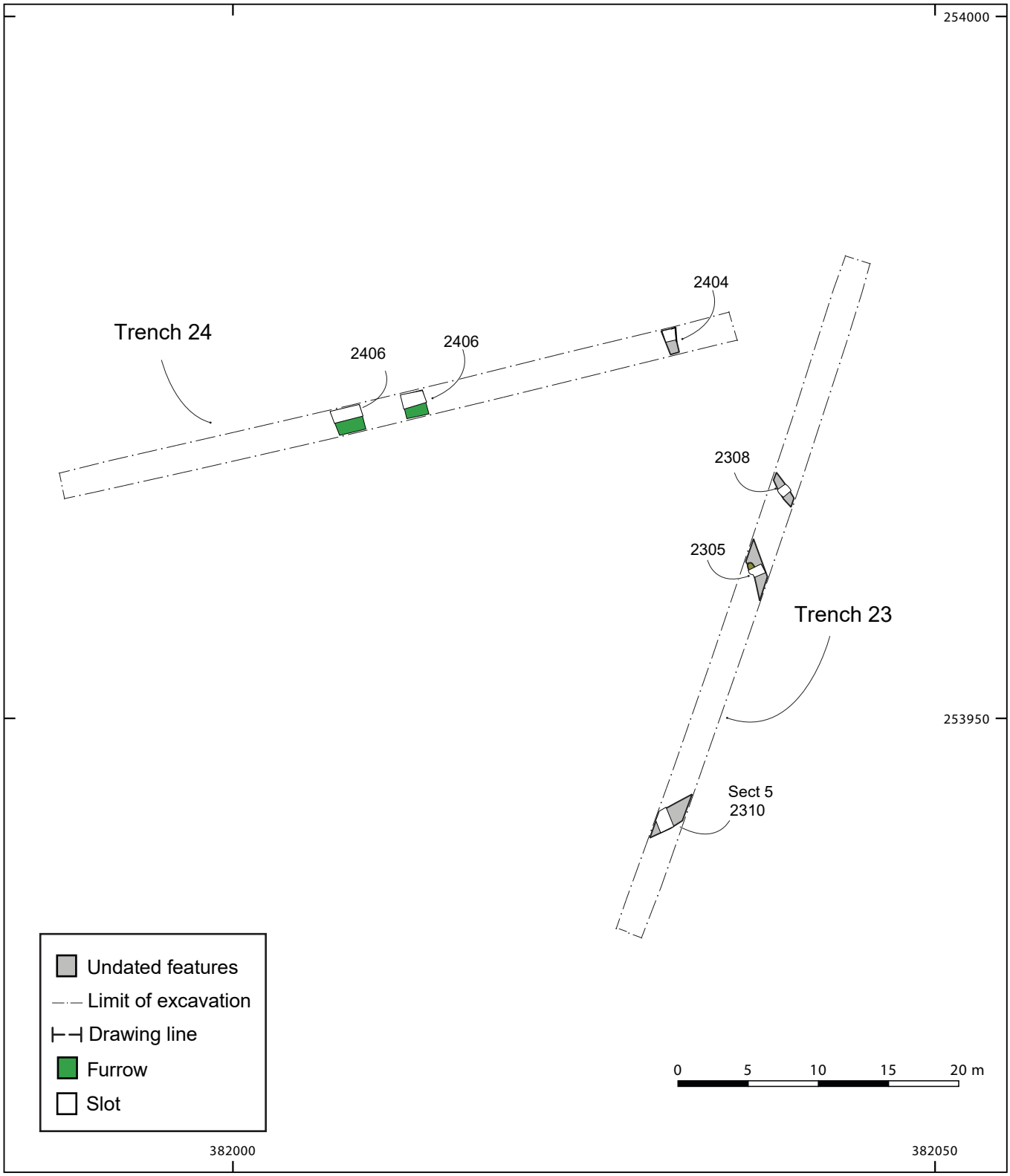


Context group 17

Section 116



Sections of post-medieval features *Figure 14*



Trenches 23 and 24 with furrows and undated features *Figure 15*

Plates

Plate 1: View south-west across the site. The excavated areas are visible in the foreground, with the modern settlement of Rushwick and the Malvern Hills visible to the rear.

Plate 2: View south-west across four-post structure CG15 cut into the top of earlier gully CG14. A sherd of Roman Severn valley ware was recovered from one of the postholes tentatively suggesting a Roman date. 1m scale.

Plate 3: South-east facing section of late-Saxon ditch 1009 (CG02). The uppermost fill of the ditch contained an abundance of burnt daub, and charred-grain recovered from the basal fill returned a radiocarbon date of 990 – 1160 cal AD. 0.50m scale.

Plate 4: North-west facing section of late-Saxon ditch 1093 (CG02). The ditch was backfilled with a deposit containing an abundance of burnt daub, charred-grain and charcoal. 1m scale.

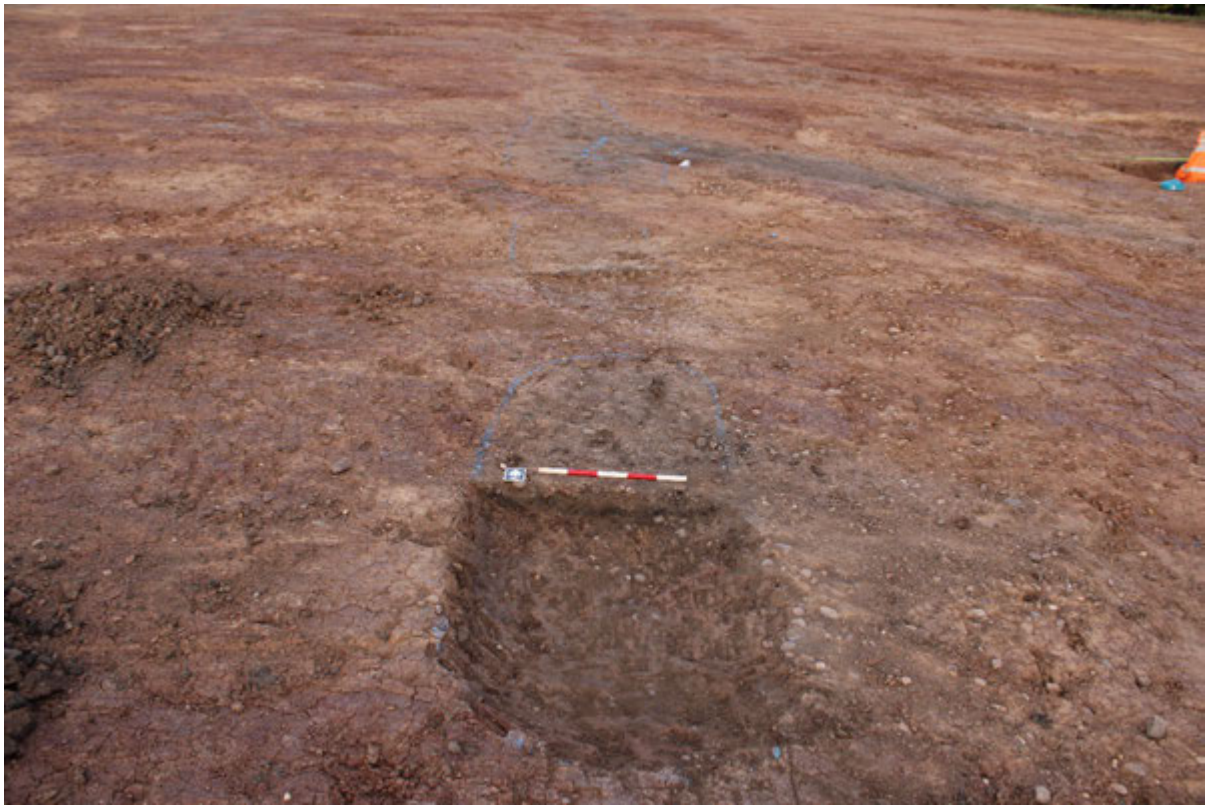


Plate 5: South facing section of late-Saxon segmented ditch 1055 (CG05). The ditch was contemporary to ditch CG02 (visible in the top right) and was backfilled with a similar charcoal-rich deposit. 0.50m scale.

Plate 6: South facing section of possible late-Saxon ditch 1118 (CG09). The ditch was truncated by 12th century field boundaries, contained a few heavily abraded Roman pottery sherds, and may have been associated with ditch CG05 to the south. 0.50m scale.

Plate 7: South facing section of posthole 1073, forming part of the northern side of late-Saxon post-built structure CG16. Note the charcoal-rich deposit within the posthole. 0.30m scale.

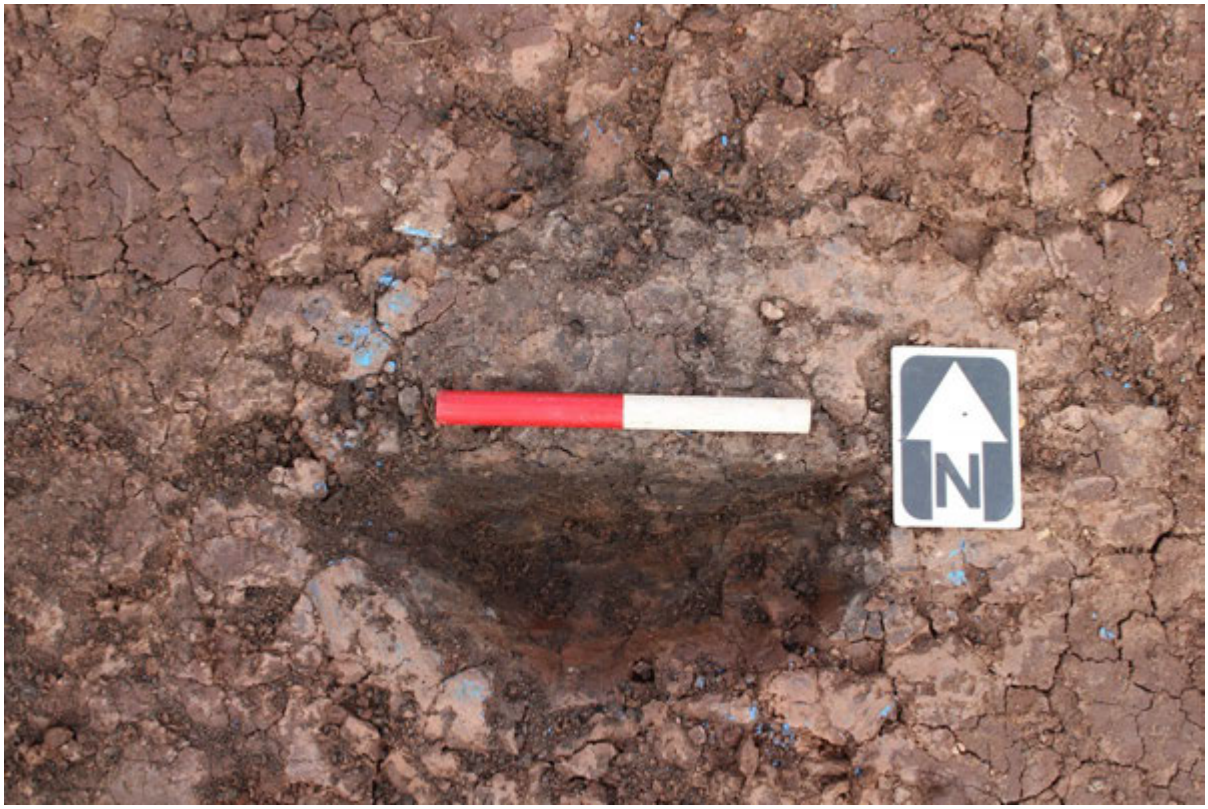


Plate 8: South facing section of posthole 1060 forming part of late-Saxon rectangular post structure CG16. 0.20m scale.

Plate 9: South-west facing section of medieval ditch 1037 (CG03) which contained an assemblage of 12th to mid-14th century pottery. This section of the ditch was located near to the late-Saxon structure CG16 and was notable for also containing an abundance of burnt daub. 0.50m scale.

Plate 10: North facing section of medieval ditches 1121 (CG03) and recut 1123 (CG04). 2m scales.

Plate 11: Relationship slots excavated through the intersection of medieval ditches 1113 (CG04) and 1110 (CG07). View north-east, 1m scales.

Plate 12: East facing section of medieval ditches 1161 (CG07; left) and 1159 (CG08; right). A possible posthole (1164) is located to the immediate left of ditch 1161. 1m scale.

Plate 13: East facing section of medieval ditches 1151, 1153 (both left), 1155 (CG10; centre), and 1157 (CG11; right). A small assemblage of 12th to mid-14th century pottery was recovered from CG11, but the more remarkable find comprised a silver / lead alloy Henry 1 penny from ditch 1153 providing a date range of c 1125-1135 AD. 1m scale.

Plate 14: A close-up shot of the east facing section of medieval ditch terminus 1119 (CG11). The orange flecks in section comprise fragments of burnt daub, thought to have originated from the nearby late-Saxon structure CG16. 0.50m scale.

Plate 15: South facing section of post-medieval boundary ditch 1173 (CG17). An assemblage including clay pipe, tile and brick was recovered from the ditch. 1m scale.

Plate 16: East facing section of post-medieval boundary ditch 1193 (CG06). An assemblage of residual Roman pottery and a post-medieval to modern tile was recovered. 1m scale.

Plate 17: View north-east across Trench 23. 1m scales.

Plate 18: View east across Trench 24. 1m scales.

Plate 19: late-10th to early-11th century sherd of Cotswolds unglazed ware (fabric 57; left) and square-rimmed sherd of late-11th to late-12th century Cotswolds unglazed ware cooking pot (fabric 55, centre/right). Scale in cm.

Plate 20: Fragment of 'intermediate' type doughnut loomweight recovered from late-Saxon ditch CG02. This type of loomweight was in use from the 6th to late-8th centuries AD, hinting at some mid-Saxon activity on the site. Scale in cm.

Plate 21: Silver / lead alloy Henry 1 penny obverse (left) and reverse (right). The coin appeared to be clipped and the reverse showed it be a 'quadrilateral on cross fleury type', which dated it c 1125-1135. Scale in cm.

Appendix 1: Summary of project archive (WSM78369)

TYPE	DETAILS*
Artefacts and Environmental	Animal bones, Ceramics, Environmental (macrofossil plant remains), Metal
Paper	Context sheet, Diary (Field progress form), Drawing, Plan, Report, Section
Digital	Database, GIS, Images raster/digital photography, Spreadsheets, Survey, Text

**OASIS terminology*

The project archive is currently held at the offices of Worcestershire Archaeology. Subject to the agreement of the landowner it is anticipated that it will be deposited at Worcestershire County Museum.

Appendix 2: Summary of data for HER

period	material class	material subtype	object specific type	count	weight (g)	start date	end date	specialist report?	key assemblage?
?modern	metal	iron	fitting	1	140			N	N
?modern	metal	iron	staple	1	11			N	N
late post-med/modern	ceramic		pot	2	6	L18C	20C	Y	N
late post-med/modern	glass		vessel	1	3			N	N
LIA/ERB	ceramic		pot	1	9	LIA	2C	Y	N
medieval	ceramic		pot	5	41	12C	M14C	Y	N
medieval	ceramic		pot	1	55	L11C	E12C	Y	N
medieval	ceramic		pot	42	206	L11C	M14C	Y	N
medieval	metal	lead alloy	coin	1	1	c.1125	c.1135	Y	Y
mid Saxon	ceramic	fired clay	loomweight	1	101	6C	L8C	Y	Y
mid/late Saxon	ceramic	fired clay	?daub	1	18			Y	Y
mid/late Saxon	ceramic	fired clay	daub	175	3585			Y	Y
mid/late Saxon	ceramic		pot	1	7	E11C	12C	Y	Y
Roman	ceramic		pot	2	10	M1C	4C	Y	Y
modern	ceramic		kiln furniture	1	7	M18C	20C	Y	N
modern	ceramic		pot	5	9	L18C	20C	Y	N
modern	ceramic		roof tile(flat)	1	34	19C	20C	Y	N
modern	metal	copper alloy	button	4	3	1850	1950	N	N
modern	metal	copper alloy	coin	1	5	1945	1945	N	N
post-medieval	ceramic		clay pipe	3	10			N	N
post-medieval	ceramic		pot	9	384	L17C	18C	Y	N
post-medieval	ceramic		roof tile	1	125	1600	1800	Y	N

post-medieval	ceramic		roof tile	2	22	16C	18C	Y	N
post-medieval	ceramic		roof tile	1	41	L16C	18C	Y	N
Roman	ceramic		unidentified	1	12	M1C	4C	Y	N
Roman	ceramic		pot	1	3	AD240	AD400	Y	N
Roman	ceramic		pot	2	25	L3C	4C	Y	N
Roman	ceramic		pot	11	75	M1C	2C	Y	N
Roman	ceramic		pot	24	92	M1C	4C	Y	N
Roman	metal	copper alloy	coin	1	14		3C	N	N
undated	metal	iron	object	2	34			N	N
undated	stone	red sandstone	?tile	1	228			N	N

Appendix 3: Radiocarbon dating report (Beta Analytic)

Beta Analytic, Inc.
4985 SW 74th Court
Miami, FL 33155 USA
Tel: 305-667-5167
Fax: 305-663-0964
info@betalabservices.com

ISO/IEC 17025:2017-Accredited Testing Laboratory

February 20, 2023

Ms. Elizabeth Pearson
Worcestershire Archaeology
The Hive, Sawmill Walk, The Butts
Worcester, WRI 3PD
United Kingdom

RE: Radiocarbon Dating Results

Dear Ms. Pearson,

Enclosed is the radiocarbon dating result for one sample recently sent to us. As usual, specifics of the analysis are listed on the report with the result and calibration data is provided where applicable. The Conventional Radiocarbon Age has been corrected for total fractionation effects and where applicable, calibration was performed using 2020 calibration databases (cited on the graph pages).

The web directory containing the table of results and PDF download also contains pictures, a cvs spreadsheet download option and a quality assurance report containing expected vs. measured values for 3-5 working standards analyzed simultaneously with your samples.

The reported result is accredited to ISO/IEC 17025:2017 Testing Accreditation PJLA #59423 standards and all pretreatments and chemistry were performed here in our laboratories and counted in our own accelerators here in Miami. Since Beta is not a teaching laboratory, only graduates trained to strict protocols of the ISO/IEC 17025:2017 Testing Accreditation PJLA #59423 program participated in the analysis.

As always Conventional Radiocarbon Ages and sigmas are rounded to the nearest 10 years per the conventions of the 1977 International Radiocarbon Conference. When counting statistics produce sigmas lower than +/- 30 years, a conservative +/- 30 BP is cited for the result unless otherwise requested. The reported d13C was measured separately in an IRMS (isotope ratio mass spectrometer). It is NOT the AMS d13C which would include fractionation effects from natural, chemistry and AMS induced sources.

When interpreting the result, please consider any communications you may have had with us regarding the sample. As always, your inquiries are most welcome. If you have any questions or would like further details of the analysis, please do not hesitate to contact us.

The cost of analysis was previously invoiced. As always, if you have any questions or would like to discuss the results, don't hesitate to contact us.

Sincerely,

Ronald E. Hatfield President

Beta Analytic, Inc.
4985 SW 74th Court
Miami, FL 33155 USA
Tel: 305-667-5167
Fax: 305-663-0964
info@betalabservices.com

ISO/IEC 17025:2017-Accredited Testing Laboratory

REPORT OF RADIOCARBON DATING ANALYSES

Elizabeth Pearson

Worcestershire Archaeology

Report Date: February 20, 2023

Material Received: February 03, 2023

Laboratory Number	Sample Code Number	Conventional Radiocarbon Age (BP) or Percent Modern Carbon (pMC) & Stable Isotopes	
Beta - 655100	**P6343/1010/1**	**980 +/- 30 BP**	IRMS δ13C: -20.5 o/oo

(92.7%)	**1017 - 1158 cal AD**	**(933 - 792 cal BP)**
(2.7%)	**996 - 1004 cal AD**	**(954 - 946 cal BP)**

Submitter Material: Plant
Pretreatment: (charred material) acid/alkali/acid
Analyzed Material: Charred material
Analysis Service: AMS-Standard delivery
Percent Modern Carbon: 88.52 +/- 0.33 pMC
Fraction Modern Carbon: 0.8852 +/- 0.0033
D14C: -114.85 +/- 3.31 o/oo
Δ14C: -122.63 +/- 3.31 o/oo (1950:2023)
Measured Radiocarbon Age: (without d13C correction): 910 +/- 30 BP
Calibration: BetaCal4.20: HPD method: INTCAL20

Results are ISO/IEC-17025:2017 accredited. No sub-contracting or student labor was used in the analyses. All work was done at Beta in 4 in-house NEC accelerator mass spectrometers and 4 Thermo IRMSs. The "Conventional Radiocarbon Age" was calculated using the Libby half-life (5568 years), is corrected for total isotopic fraction and was used for calendar calibration where applicable. The Age is rounded to the nearest 10 years and is reported as radiocarbon years before present (BP), "present" = AD 1950. Results greater than the modern reference are reported as percent modern carbon (pMC). The modern reference standard was 95% the 14C signature of NIST SRM-4990C (oxalic acid). Quoted errors are 1 sigma counting statistics. Calculated sigmas less than 30 BP on the Conventional Radiocarbon Age are conservatively rounded up to 30. d13C values are on the material itself (not the AMS d13C). d13C and d15N values are relative to VPDB. References for calendar calibrations are cited at the bottom of calibration graph pages.

BetaCal 4.20

Calibration of Radiocarbon Age to Calendar Years

(High Probability Density Range Method (HPD): INTCAL20)

(Variables: d13C = -20.5 o/oo)

Laboratory number **Beta-655100**

Conventional radiocarbon age **980 ± 30 BP**

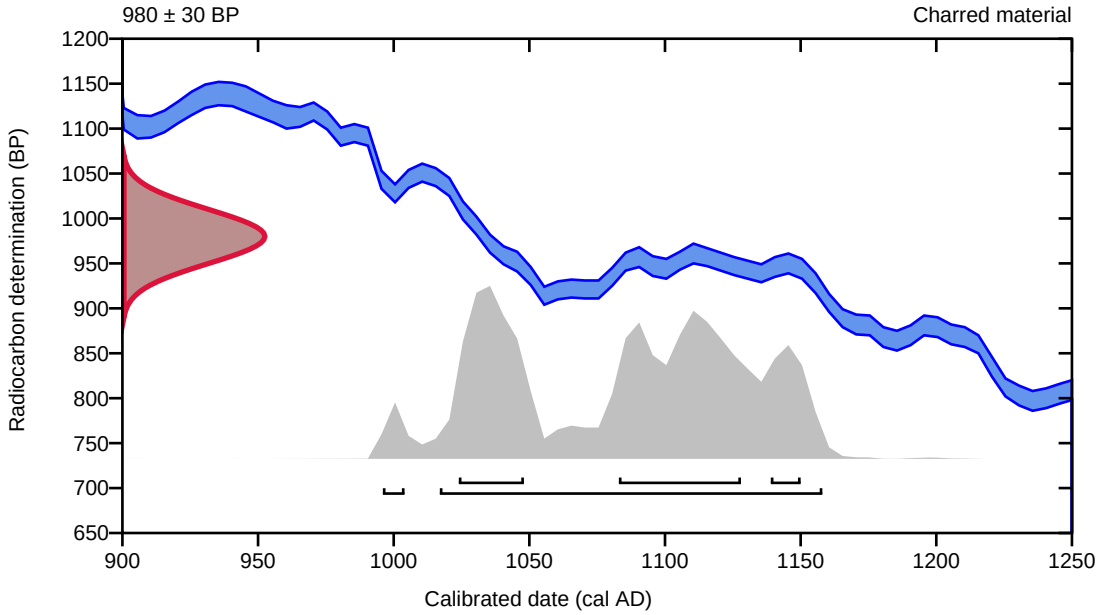
95.4% probability

(92.7%)	1017 - 1158 cal AD	(933 - 792 cal BP)
(2.7%)	996 - 1004 cal AD	(954 - 946 cal BP)

68.2% probability

(36.3%)	1083 - 1128 cal AD	(867 - 822 cal BP)
(24.1%)	1024 - 1048 cal AD	(926 - 902 cal BP)
(7.8%)	1139 - 1150 cal AD	(811 - 800 cal BP)

P6343/1010/1



Database used

INTCAL20

References

References to Probability Method

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1), 337-360.

References to Database INTCAL20

Reimer, et al., 2020, Radiocarbon 62(4):725-757.

Beta Analytic Radiocarbon Dating Laboratory
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ISO/IEC 17025:2017-Accredited Testing Laboratory

Quality Assurance Report

This report provides the results of reference materials used to validate radiocarbon analyses prior to reporting. Known-value reference materials were analyzed quasi-simultaneously with the unknowns. Results are reported as expected values vs measured values. Reported values are calculated relative to NIST SRM-4990C and corrected for isotopic fractionation. Results are reported using the direct analytical measure percent modern carbon (pMC) with one relative standard deviation. Agreement between expected and measured values is taken as being within 2 sigma agreement (error x 2) to account for total laboratory error.

Report Date: February 20, 2023
Submitter: Ms. Elizabeth Pearson

QA MEASUREMENTS

Reference 1	
Expected Value:	0.44 +/- 0.04 pMC
Measured Value:	0.44 +/- 0.03 pMC
Agreement:	Accepted
Reference 2	
Expected Value:	129.41 +/- 0.06 pMC
Measured Value:	129.31 +/- 0.34 pMC
Agreement:	Accepted
Reference 3	
Expected Value:	96.69 +/- 0.50 pMC
Measured Value:	97.54 +/- 0.28 pMC
Agreement:	Accepted

COMMENT: All measurements passed acceptance tests.

Validation: 

Date: February 20, 2023